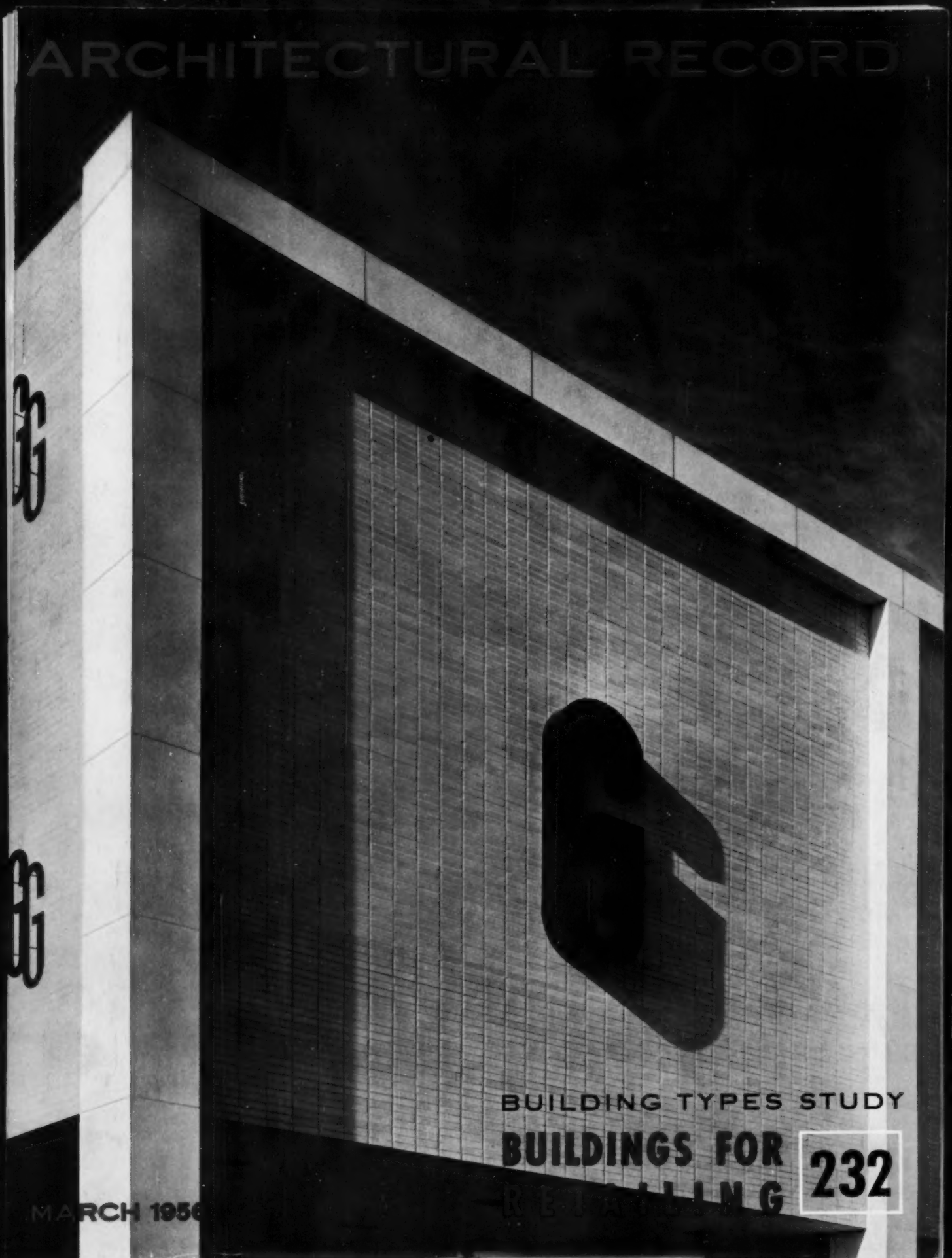
ARCHITECTURAL RECORD



BUILDING TYPES STUDY

BUILDINGS FOR [illegible]LING

232

MARCH 1956

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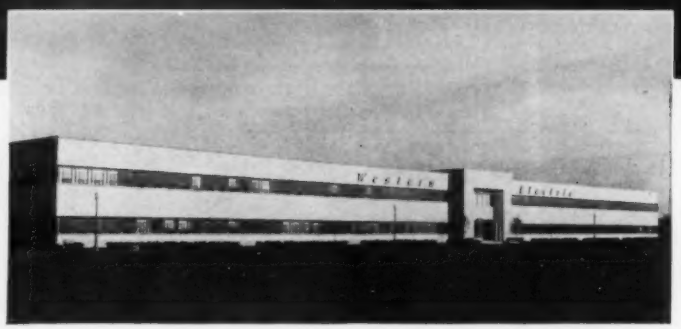

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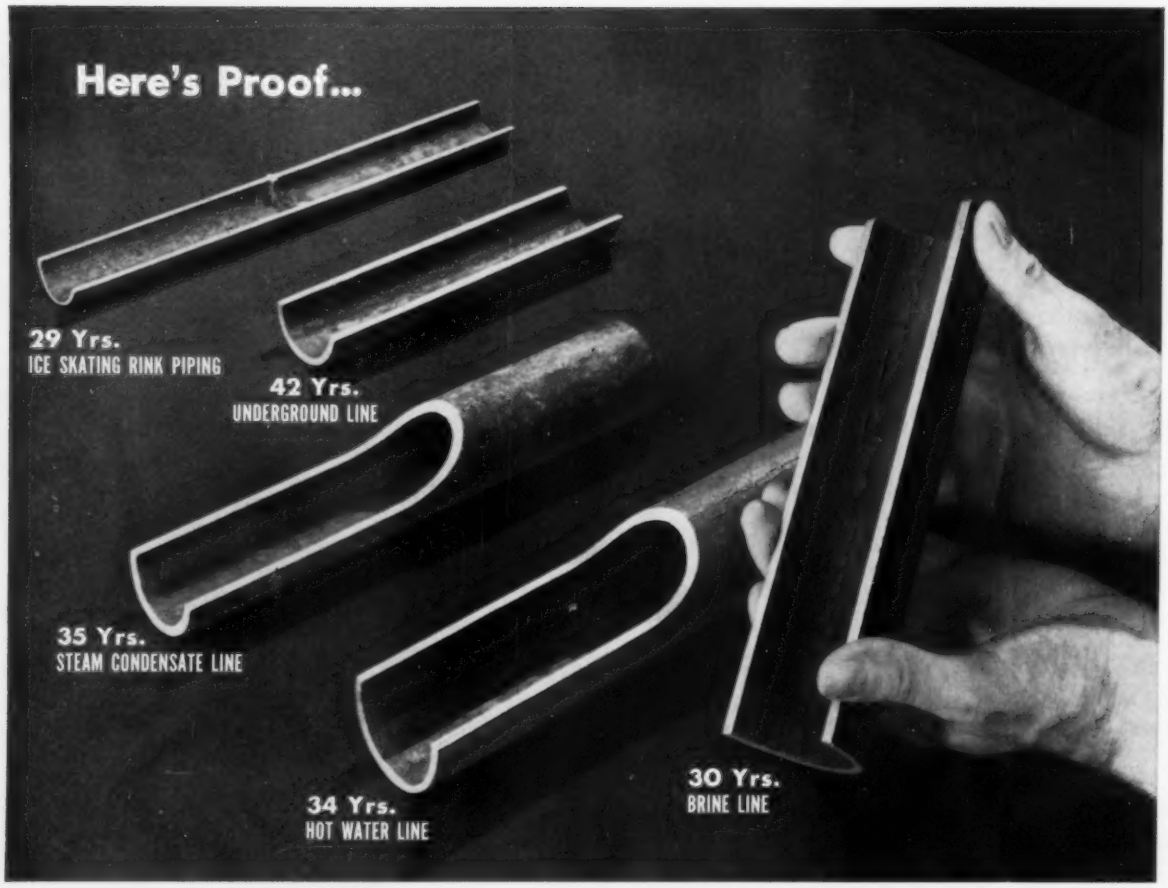

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ARCHITECTURAL RECORD

March 1956 Vol. 119 No. 3

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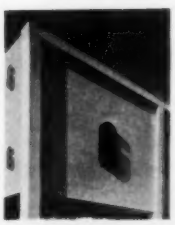

COVER: Gimbels, Milwaukee, Wisc.: Grassold-Johnson & Assoc., Architects; Hedrich-Blessing, Photographer

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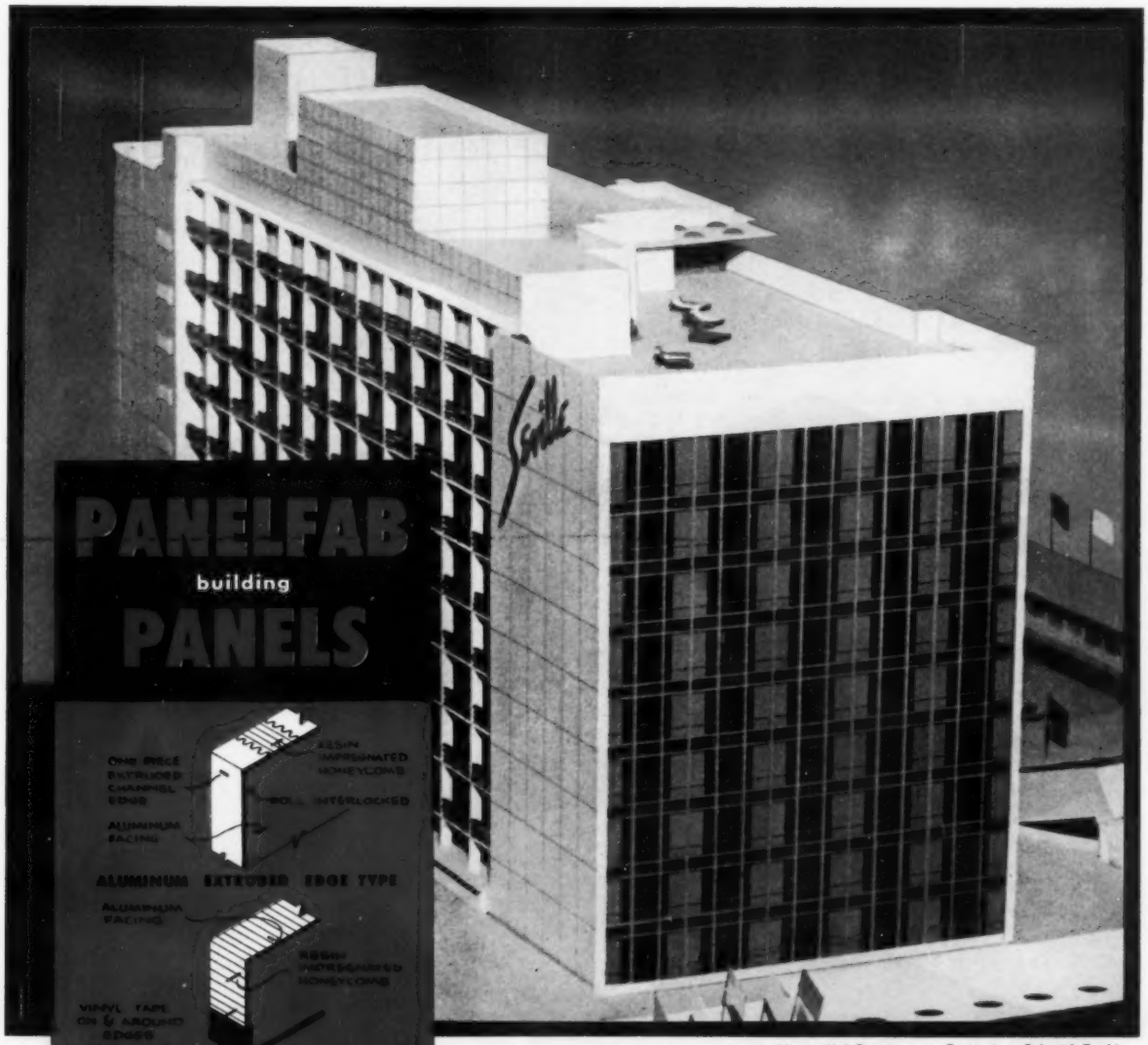

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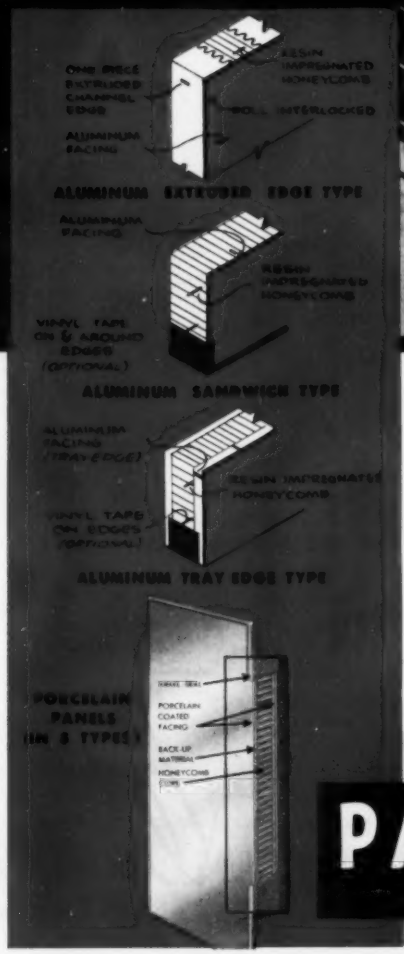

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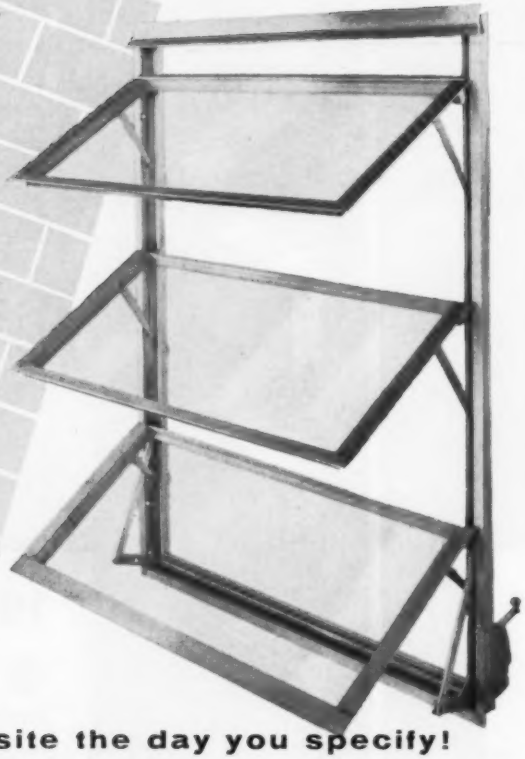

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PERSPECTIVES

DEAN HUDNUT'S 'The Engineer's Aesthetics' [AR, Jan. 1956, pages 139-146] cast a penetrating eye on some of our current architectural notions in such a way as to deeply stir the imagination. No contemporary observer has ever surpassed this statement." — Paul Rudolph.

ON FINDING ONESELF OUT OF DATE is the title of a not-very-plaintive little essay by Nicholas Pevsner for *The Architects' Journal* (on the occasion of his appearance there in the *Journal*'s annual selection of "Men of the Year"). "What I call modern industrial design is apparently no longer modern industrial design, and what I call modern architecture is no longer modern architecture," mourns Professor Pevsner. "To me the standard is still that of Gropius aged 72, of Mies aged 69, and of the Le Corbusier of the 'thirties. But what is modern in the sense of the recent and the most eagerly discussed is the crazy, utterly arbitrary perforation of the walls of Le Corbusier's chapel at Ronchamp, and the crazy leaning balconies in Lasdun's Hallfield Estate, and kidney- or worse-shaped occasional tables, their rims upturned for good measure, and Breuer's fantastical church at Collegeville, Minn., and Johnson's Soanian guest-house, and the pretty cottages and flats with low-pitched roofs, and some of the small, pretty motifs of Mr. Gibberd. Now to me that is Art-Nouveau or Neo-Tessenow of about 1912, or neo-Lutyens. But however you may describe these changes, their outcome is something I would call emphatically no longer modern, not in the sense of the outmoded, but in the sense of postmodern. The term shows up the absurdity of the thought. It is I who am no longer modern. For the Pimlico flats to me are modern all right; so are the new LCC estates, the foyers and staircases of the Festival Hall, Mr. Bunshaft of Skidmore, Owings and Merrill, the Olivetti Building at Milan, and Hunstanton School. And woe to him who would dare to list the Smithsons with the out-of-date. So there are here only two possibilities. Either Le Corbusier and Breuer are deviationists, or Mr. Bunshaft and I are reactionaries, putting up a fight to maintain outmoded standards — standards created (as I ought to be the last to deny) as long as fifty or at least forty years ago. It looks alarmingly as if the second part of the alternative is the truth."

HOW HUNGRY ARE YOU? The monthly *Bulletin* of the Brooklyn Chapter of the American Institute of Architects reports: "Architectural students were invited to hear 'the master' speak at a forum planned by the Architectural League on December 7, 1955. No doubt Mr. Wright is most inspiring, altho he confines architecture to the creative sphere where alterations and violations play no part. Says he, 'The architect survives only if he does not classify himself as a business . . . he must not strive for quantity instead of quality. . . . Don't be afraid to devote your time and love for years and years to a single building. Make an honest and beautiful thing of it. . . . It is better than having a big practice. Stick to the love of the thing you are doing, then we will have an architecture.' Sounds wonderful, but what does one do about eating?"

ANOTHER END OF THE TELESCOPE: the *Journal's* Astragal was intrigued by a note in a recent RECORD story about a Breuer house, and quoted: "This is the owner's third house, not including one designed for them by Frank Lloyd Wright, but not built. Since they were quite happy with the house they had, and their space requirements had not changed, Mr. Breuer naturally asked them why they wanted to build another house. They answered, quite simply, that they admired his architecture so much they wanted the experience of living in a house of his design." Then Astragal: "This attitude towards domestic architecture as an art is a very American one. Astragal recalls the story told by an English architect who visited one of Frank Lloyd Wright's best postwar houses near Minneapolis. 'We asked Mr. Wright to build us a house over ten years ago,' said the client. 'We were quite settled in another house by that time but when he wrote to us saying he could now undertake the job we just had to build it. You never know, it might have been his last and we should never have forgiven ourselves.'"

THE [MASONRY] RAMPARTS WE WATCH: The following news item, presented in its entirety, comes from the Clay Products Association of the Southwest: "Building industry experience has produced a revolutionary wall material which is manufactured from the world's most abundant and cheapest raw material. The product possesses natural beauty with a variety of textures and almost infinite color. The material is absolutely permanent, invulnerable to decay, insects and weather. Laboratory tests indicate compressive strengths as high as four tons per sq in. Other physical properties are similarly outstanding. To meet the ready market, manufacturing and distribution facilities have been established throughout the country and the product is immediately available to the construction industry. The revolutionary material is called . . . 'brick.'"

THE STATLER-HILTON, a $16 million, 20-story, 1001-room hostelry on a 56,510-sq ft site in downtown Dallas, opened in January, to provide a twenty-first U. S. city with at least one hotel owned and operated by Hilton Hotels, Inc. (which also operates or soon will operate hotels in 11 cities abroad — see below for some of them). It was designed by architect William B. Tabler of New York for the Statler interests (AR, June 1954, pages 158–163) before they were absorbed by Hilton, and it is the proud boast of the new owners, as of the old, that it is "one of the largest projects of its kind developed anywhere in the world for a quarter of a century." There is no rentable office space, but there are 17,620 sq ft of shops and stores; guest rooms occupy 3,106,480 cu ft and public rooms and service areas 3,038,520 cu ft — or 50.5 per cent to 49.5 per cent, as compared with the 50–50 ratio generally considered optimum for metropolitan hotels. All public rooms are within walking distance of lobby; include five ballrooms, 14 dining rooms, 26 meeting and display rooms. Exteriors are aluminum glass and porcelain enamel curtain walls, structure flat-slab cantilever construction; air conditioning supply lines occupy the vertical mullions

HILTON INTERNATIONAL reaches 'round the world: last month's announcement of the Tokyo project completed the circuit. In January, plans for a $20 million development at Waikiki Beach in Honolulu were announced. (No announcement on architects for either.) Shown here are three Hilton projects now under construction: above left, Habana Hilton, Havana, and top right, Nile Hilton, Cairo, Welton Becket & Associates, architects; right, Cavalieri Hilton, Rome, Emilio Pifferi, architect. Completed: Puerto Rico, Spain and Turkey; also under way: Mexico, Montreal, Berlin. Contemplated: Manila, Hong Kong, Bangkok. Djakarta, Colombo, Sydney, Melbourne

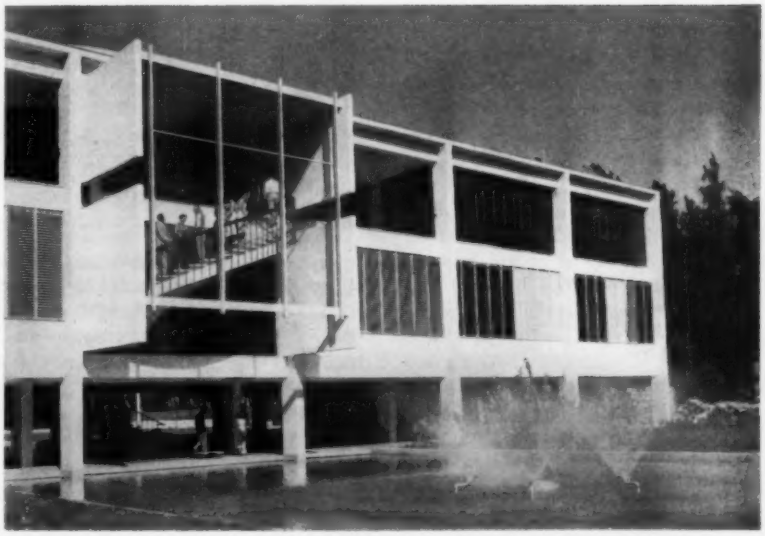
SOUTHLAND CENTER will give Dallas the tallest office building (42 stories) west of the Mississippi and its owner, Southland Life Insurance Company, some 1,400,000 sq ft of space, including 225,000 sq ft of underground parking; 175,000 sq ft of stores, shops, restaurants and auditorium; and approximately 400,000 sq ft of net usable office area (the top 12 floors to be rented); "Sheraton-Dallas" Hotel will occupy 28-story tower (right), offices future 36-story tower (left). Architect: Welton Becket & Associates

POLISHED BLACK GRANITE set in a grid of stainless steel will make the exteriors of C.I.T. Financial Corporation's projected home office on New York's Madison Avenue between 59th and 60th streets. Harrison & Abramovitz are the architects. The New York Trust Company will establish its sixth midtown branch on the street floor and lower level; architects for the banking quarters are Halsey, McCormack & Helmer. Three other units of space on the ground floor will be available for lease; but the major part of the floor will be reserved for lobby and reception area for C.I.T., which will occupy all of the upper floors. The second floor will be devoted entirely to employe facilities — cafeteria, private dining rooms, lounges, meeting rooms and a 228-seat auditorium — with a planting area of trees and shrubs outside its glass enclosure. A setback terrace will surround the penthouse housing offices of senior executives. Clarke & Rapuano, landscape architects, will design the horticultural treatments. Structure will be bolted. Builder: George A. Fuller

RADIATION MACHINE TEST FACILITY, called the world's largest, will be housed in this building designed for High Voltage Engineering Corporation's 50-acre site on Route 128 in Burlington, Mass., by architect Carleton R. Richmond Jr. Exteriors are mainly insulated aluminum panels; sections housing radiation test vaults are cast concrete, further shielded by mounds of earth 9 ft high tapering to grade 16 ft away. Vaults have 4-ft-thick concrete walls, 20-ton concrete block doors

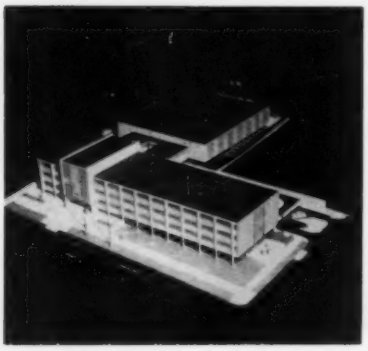
SUPREME COURT BUILDING FOR PUERTO RICO was dedicated last month in ceremonies at which it was described by the Chief Justice of Puerto Rico, A. Cecil Snyder, as "a happy marriage of form and function." The reflecting pool which runs beneath the building might be taken as an illustration of the marriage, at any rate; it also serves as source of water supply for the air conditioning system. The marble and glass building has a circular session room illuminated by a round skylight above the semi-circular mahogany bar in its center; one arc of the wall can be moved back to enlarge the room for public ceremonials. Architects were Toro and Ferrer of Puerto Rico

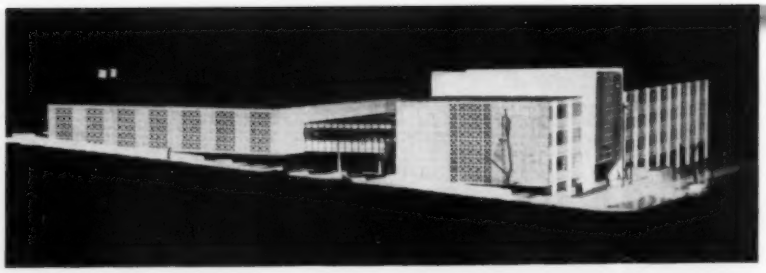
(Continued on page 12)



BUILDINGS IN THE NEWS

(Continued from page 11)





MONTGOMERY COUNTY, ALA., COURTHOUSE: CONTEMPORARY DESIGN WINS A CASE

The traditionalists were up in arms when this design for Montgomery's new courthouse was proposed by architects Pearson, Tittle & Narrows; they didn't object to the basic planning which would yield 125,000 sq ft of floor space within a budget price of $1,750,000, but they wanted changes to make the courthouse "as modern as possible inside but Colonial outside," to quote the architects. The issue was finally debated at a public meeting, with the Board of Revenue (the client) sitting as jury and the Montgomery Association of Architects presenting the winning argument for contemporary design.

The courthouse will be of reinforced concrete construction, with exterior walls of flat cast stone, aluminum windows and mullions of anodized gray aluminum, and white concrete columns. Stone screens are used as a decorative method of sun control. Interiors will have, for public spaces, terrazzo floors, walls of plaster above marble wainscots, and acoustical tile ceilings. Offices will have plastered walls, acoustical tile ceilings and vinyl tile floors.

The plan puts facilities most visited by the general public — record rooms, public auditorium, sheriff's office, etc. — on the two lower floors; courtrooms and related facilities on the third floor; and jail, along with warden's office and staff quarters, on the top floor. The jail will have a special elevator with a separate entrance; cells and dayrooms will be set back the width of a corridor so prisoners have daylighting and an outside view but no view of the street.

The building will be completely weather conditioned.

CAMPUS AT SAN JOSÉ AMONG PROJECTS IN IBM WEST COAST EXPANSION PUSH

A campus-type center for manufacturing, research and education will be built by International Business Machines Corporation on a 190-acre site at San José, Cal., as the major project in a multi-million-dollar West Coast expansion program announced last month. The San José center (photo of site plan at right), the first project of its size and type ever undertaken by IBM, will include a manufacturing plant, two connected product engineering buildings, a school (for training service engineers), a cafeteria and a multi-building laboratory group; a central administration building will be added later. John S. Bolles of San Francisco is the architect. Some 400,000 sq ft will be built this year and occupied by 1500 employes beginning in the fall.

Other IBM West Coast projects:

— A new 13-story office building and data processing center at Wilshire Boulevard and Mariposa Avenue, Los Angeles; Pereira & Luckman, architects (photo of rendering far right). Completion: mid-1957.

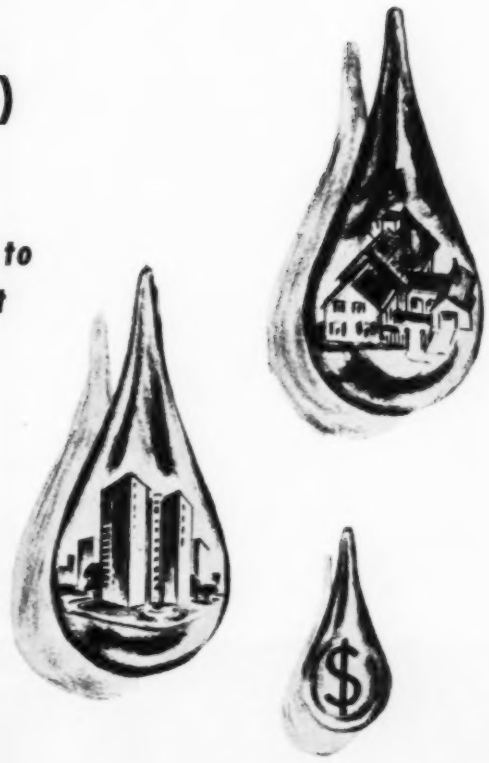
— A six-story office building now nearing completion at Market and Front streets in San Francisco; Meyer & Evans, architects. IBM will occupy four of the six floors; owners (and engineers) are Cahill Brothers. Occupancy was scheduled to get under way late last month.

— A two-story office building in Santa Monica; Milton L. Anderson, architect. Occupied in mid-January.

(More news on page 16)

Little Drops of Water (Condensation)

Ruined a Fine Home
Cost over a Million Dollars to an Apartment Development



The owners of a path-breaking apartment development had to pay a repair bill of over a MILLION DOLLARS for ripping out condensation-soaked insulation and replacing damaged plaster walls.

It was necessary to move a fine country home to a new site—the state highway was coming through. It could not be done. The sills of the house had rotted on account of condensation in the walls.

Today's tightly built, high-humidity houses create vapor problems. Vapor, which is a gas, has 1/205,000 the density of water at 32°F; about one millionth the density at 0°F. Sometimes there is excessive flow of vapor THROUGH walls and ceilings into cold building spaces. This enhances the formation of destructive condensation, especially where an adequate vapor barrier is lacking, or where there is one with too many breaks, or which while waterproof is not sufficiently vapor-proof.

METALS ARE THE BEST VAPOR BARRIERS

There is now a new*, multiple aluminum, which forms a *continuous*, edge-to-edge "blanket" of uniform depth between studs or joists, giving the entire area maximum protection against vapor-flow and condensation formation as well as against heat loss or intrusion.

The aluminum sheets, 375 ft. to 750 ft. long are almost impervious to water vapor. Infiltration under the flat stapled flanges is slight. Condensation formation, on or within this type of insulation is minimized because of the scientific construction of multiple layers of aluminum, fiber, and air spaces.

The surfaces of this aluminum have high heat ray reflectivity (97%); low absorptivity (3%); and low emissivity (3%). Conduction is slight because of preponderant air spaces of low density. Aluminum and fiber layers retard convection, outer and inner. It is available, prefabricated, as Infra Type 6 or Type 4.

*Patent applied for.

The U. S. NATIONAL BUREAU OF STANDARDS has published an informative booklet describing the destruction that condensation can cause and means of prevention. It is entitled "Moisture Condensation in Building Walls." Send us coupon for a FREE copy.

INFRA INSULATIONS CAN BE PURCHASED from 3¢ to 12¢ per sq. ft. depending on the type.

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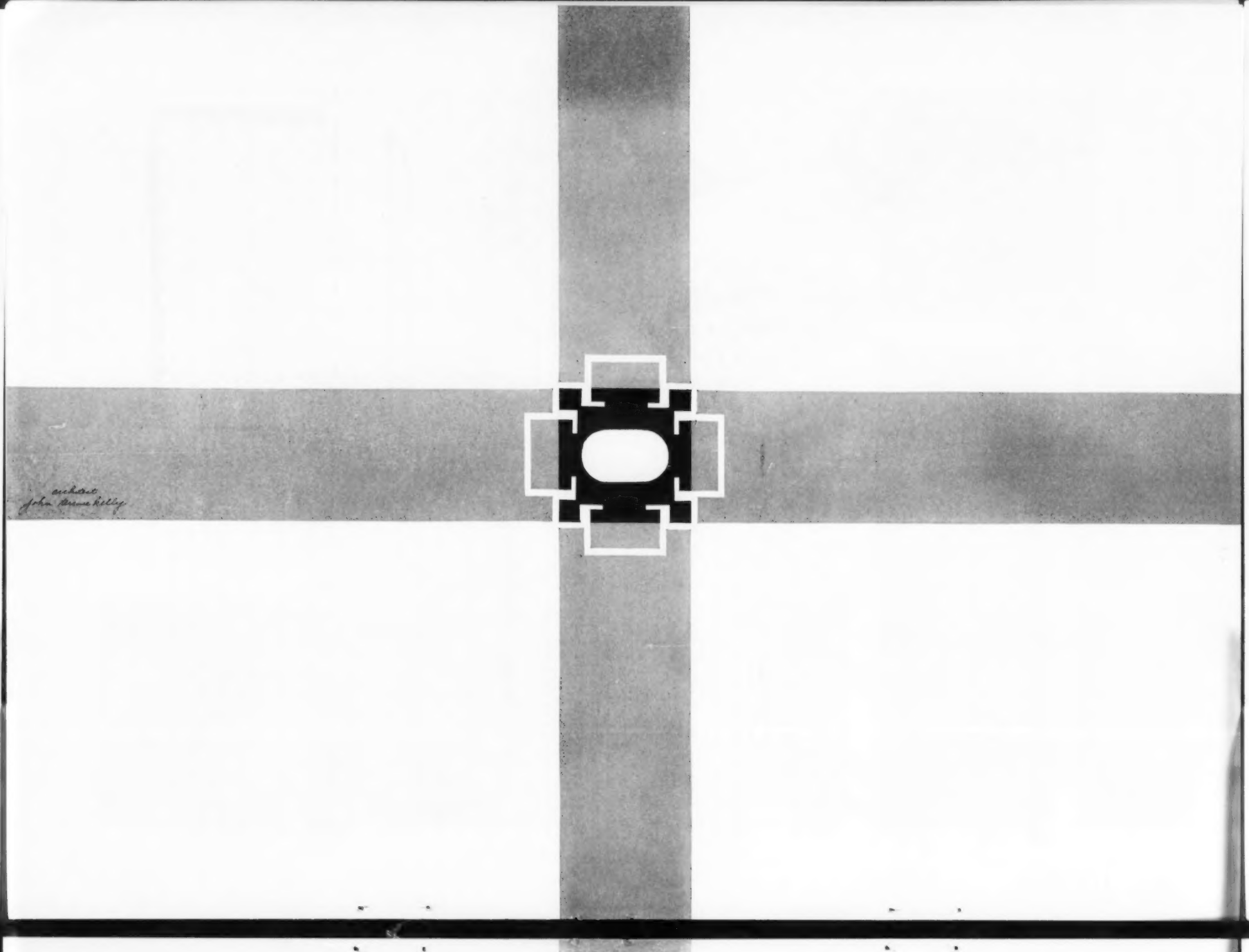
architect
John Brumbelly

in movable

partitions

the joint

is the key

to space

flexibility

write to us

the mills

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cleveland

 (Continued from page 12)

JAPAN AND CUBA GET SÃO PAULO AWARDS AS JURY WARNS FUTURE ARCHITECTS ON OBSESSION WITH "ORIGINALITY"

An international competition and exhibition for schools of architecture was held in connection with this year's III Bienal de São Paulo, sponsored, like the earlier events, by the Museum of Modern Art of São Paulo. No competition for practicing architects was held this year; it was felt that the two years since the last one (AR, June 1954, pages 10–12) was too short a time for the production of sufficient significant new work to promise an adequate number of submissions.

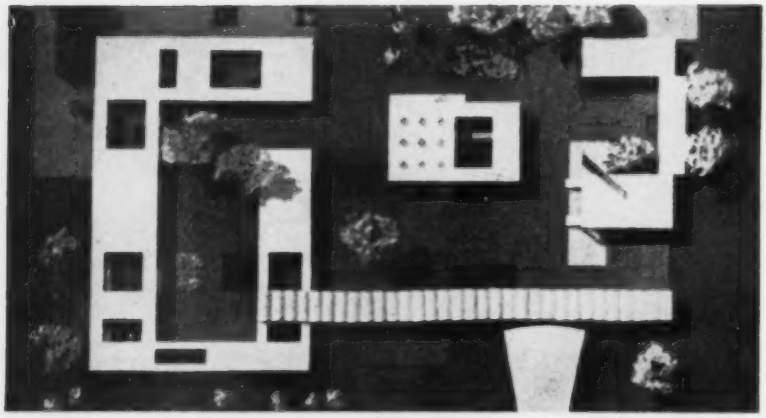
The School of Architecture of Havana University, Cuba, and the Department of Architecture of the University of Waseda, Japan, shared equal honors in the student competition, the "theme" of which was "a resting place fit to accommodate 3000 workmen during their holidays." Architect Jorge Machado Moreira of Brazil, himself a prize-winner in the II Bienal's International Architectural Competition, headed the jury of award and delivered the jury critique at the award ceremonies.

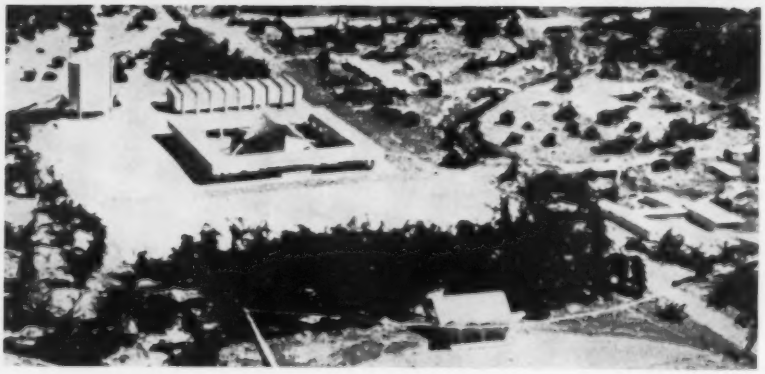
There were entries from 38 schools in 20 countries, eight of them from the United States — the University of Illinois, Harvard, Cranbrook, the University of Minnesota, Pratt Institute, North Carolina State, Rice Institute and Howard University.

Through Mr. Moreira, the jury also had some general advice to offer to "future architects, particularly to Brazilian students" (though it need hardly be so limited):

"We wish to refer to the crying need to consider architectural problems from a serious and lofty point of view, and for architects not to be constantly worried about inventive originality, as are the great majority. This preoccupation has already become a real obsession or is even felt as a duty. This brings, as a result, the frequent use of forms lacking in spontaneity, objectivity and 'raison d'etre,' and conforming neither to functional nor esthetic standards. That is not to say that we are against the development of the creative faculty of our

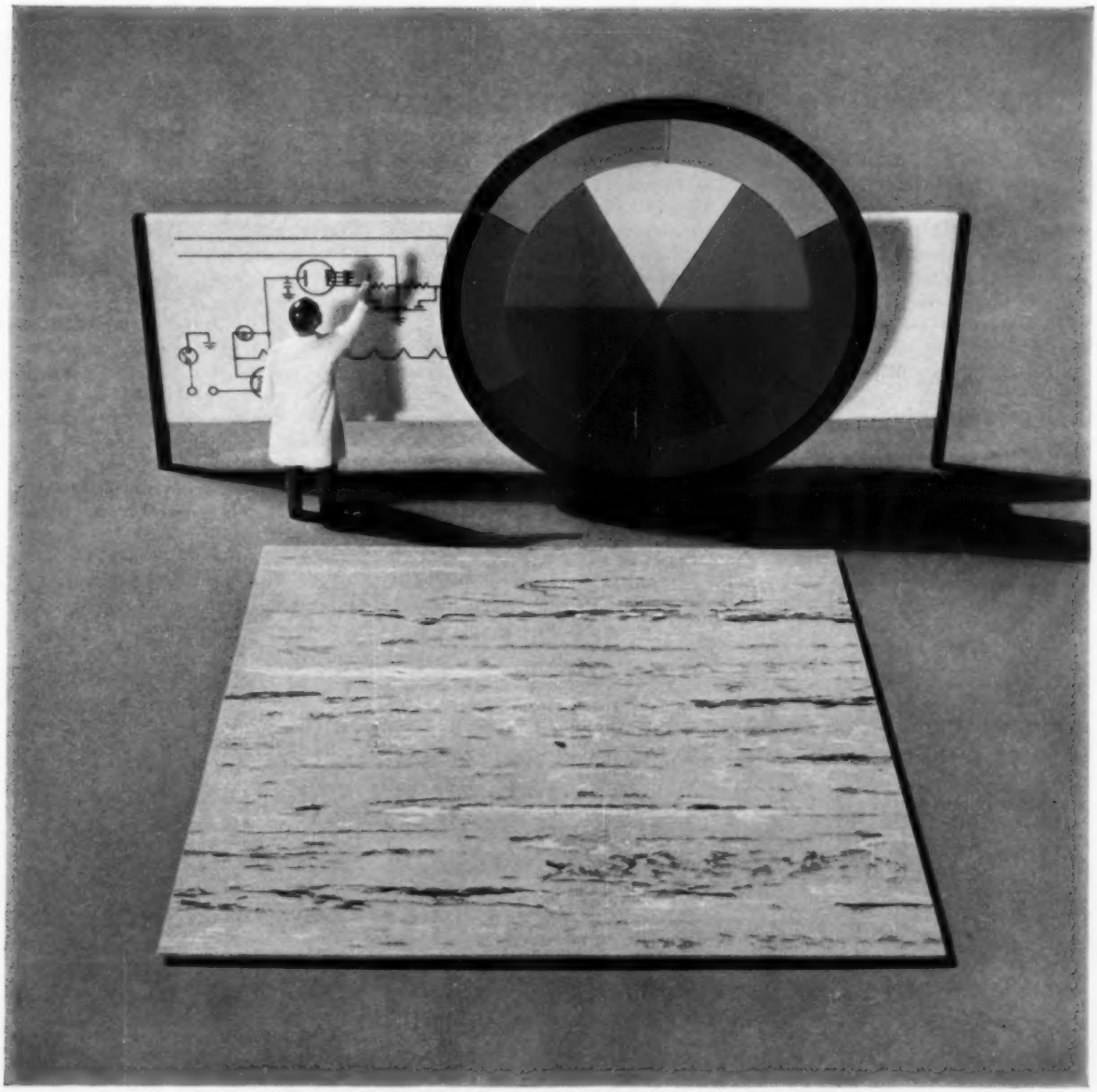
(Continued on page 316)





Shown here are examples of the submissions of the two winning entrants. Top and center, left: from the Havana University entry, view of model shows plaza area envisaged as core of project; drawing is of overall plan for site. Below, and at left below: views of portion of model and of site plan from University of Waseda

(More news on page 16B)



Controlled color in floor tile

In the laboratories of Kentile, Inc., precise tests electronically check the accuracy of pigment shade in every run of color, to help assure you of uniformly true color and clarity in the flooring you specify. This is only one of the many precision controls that have served to make famous Kentile, Inc. products the world's most popular line of resilient tile floorings. Other tests assure uniformity in thickness; accuracy of cut; surface smoothness; built-in durability and dimensional stability. The tile illustrated is Marigold, one of the many colors available in the KenFlex line.

KENTILE, INC. America's largest manufacturer of resilient floor tiles

KENTILE Asphalt Tile, Carnival Kentile, Corktone Kentile/KENCORK, Cork tile for Floors and Walls/KENRUBBER, Rubber Tile/KENFLEX, Vinyl Asbestos Tile, Carnival Kenflex, Corktone Kenflex/KENFLOR Vinyl Tile, also available by-the-yard. KENROYAL Vinyl Tile/SPECIAL KENTILE, Greaseproof Asphalt Tile/THEMETILE, KENSERTS, Decorative Inserts/KENCOVE, vinyl wall base/KENBASE, wall base.

THE GRAND PLAN FOR WASHINGTON, D. C.

The plan of Pierre L'Enfant for the capital city, largely ignored through the 19th century, was blessed with a change of fortune in 1902. In that year, a new plan (2) was announced which it was hoped would repair, as far as was possible, the damage which the original plan (1) had suffered. This new plan was the result of concerted efforts by Senator McMillan, then chairman of the Senate Committee on the District of Columbia, by the American Institute of Architects, which has ever since been closely connected with Washington improvement, and by a special commission composed of Daniel H. Burnham, Charles Follin McKim, Frederick Law Olmsted and Augustus St. Gaudens.

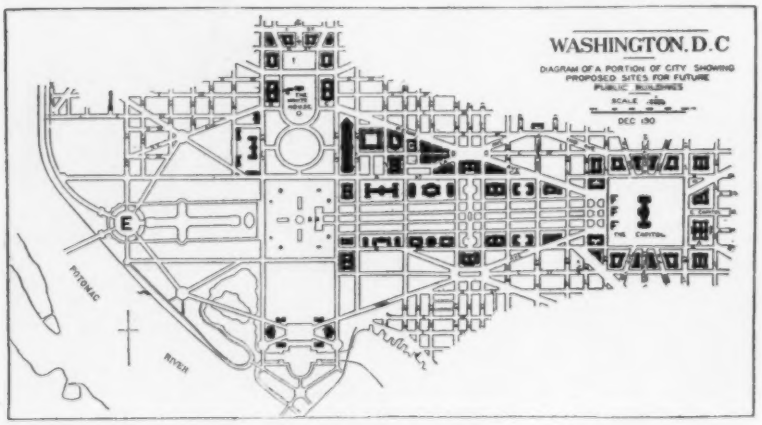
Montgomery Schuyler, reviewing the commission's report in ARCHITECTURAL RECORD's issue of May 1902, condemned the unfortunate siting of the Treasury Building and of the Congressional Library, built during the eclipse of the Grand Plan, but added, "The most remarkable malefaction is one mainly of omission. To look even cursorily at the original plan is to see how great was the importance, in the minds of its authors, of the strip reserved, and ever since known in Washington as 'The Reservation,' from the Congress House to the Washington monument. This was the 'Grand Avenue' of L'Enfant, flanked by his 'well-improved fields,' the intended route for inaugural and other stately processions which, from time immemorial, have taken the shabby and now circuitious route by Pennsylvania avenue. For fifty years it has quite faded from the minds of Congress what this wide, straight strip was 'reserved' for, and Congress proceeded to dispose of it, as if it had been a reservation in a Western wilderness, instead of in the capital of the nation. The Smithsonian was planted in it half a century ago, and the grounds were laid out under the direction of Andrew Jackson Downing, in the irregular and naturalistic fashion which he introduced, which is . . . inappropriate to the public architecture of Washington in general . . . Afterwards came the National Museum, which it has not oc-

(Continued on page 376)

Architectural Record, May 1926

1

Architectural Record, May 1902



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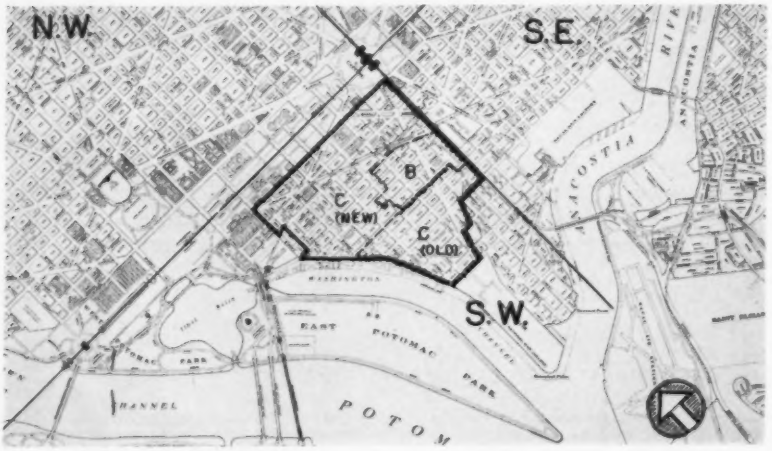

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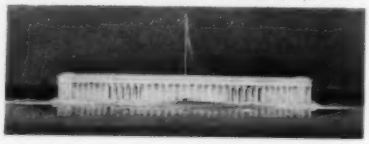
Architectural Record, May 1902

Architectural Record, April 1926



The vicissitudes of the site at the southern arm of the great cross have included the 1902 suggestion for a Monument to the Founders of the Republic (top), from Burnham, McKim, Olmsted and St. Gaudens; the 1926 proposal for a Roosevelt Memorial (center), by John Russell Pope; and finally the Jefferson Memorial (bottom), also by Pope completed in 1943

Architectural Record, April 1938

(More news on page 32)

Aluminum grating now only slightly higher than conventional steel gratings

Borden, through many years of plant production control, can now produce aluminum floor gratings by the same commercial methods used for ordinary steel gratings. Thus the ultimate in-place cost is only slightly higher than that of conventional gratings.

Once installed, the floor gratings need never be painted and have all the advantages inherent to aluminum—which includes corrosion resistance, spark-proof and light weight.

Write for complete information on BORDEN All/Weld, Pressure Locked, and Riveted Floor Gratings in this FREE 8-page catalog

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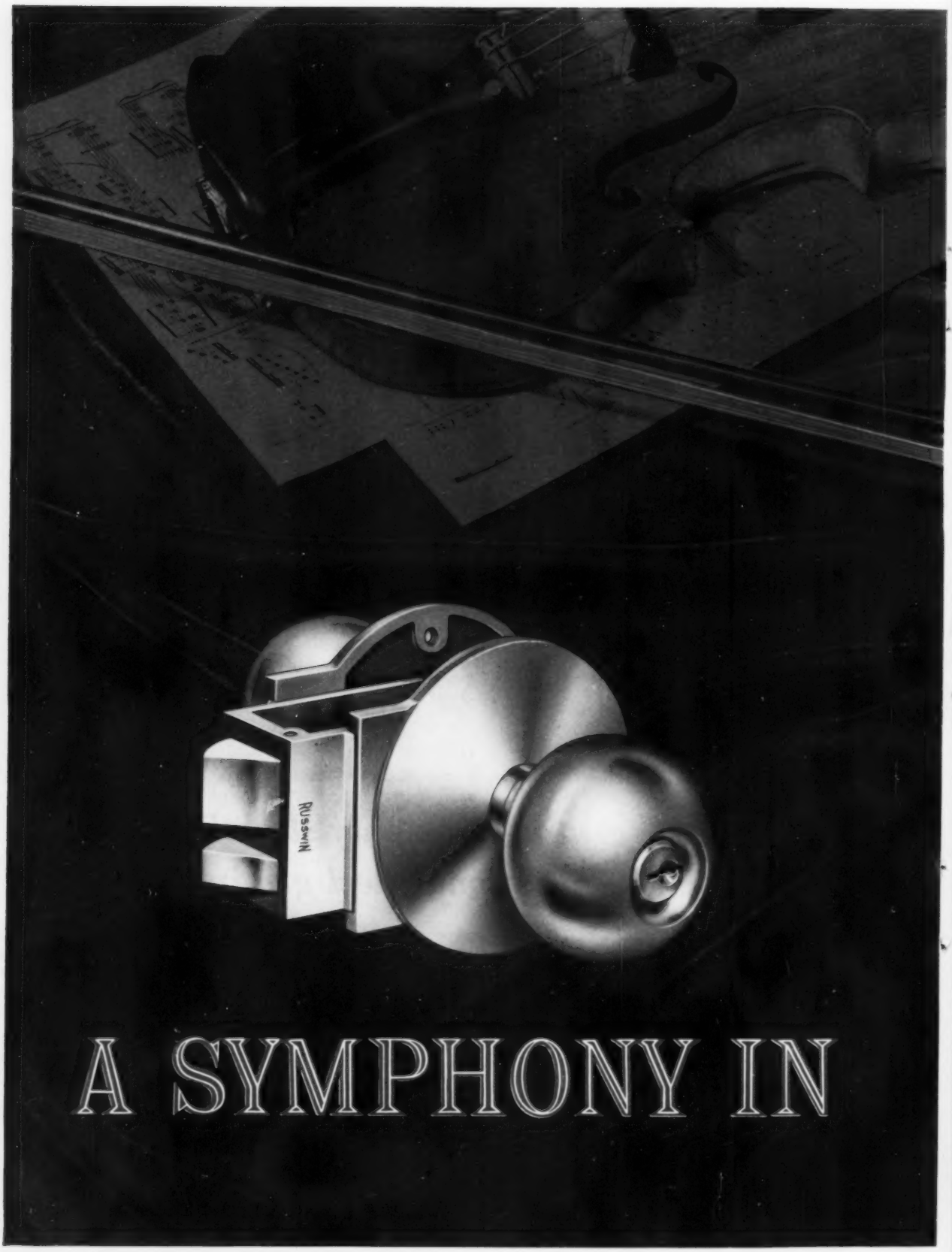
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A SYMPHONY IN

THE RUSSWIN UNILOC is designed and constructed as a completely-assembled factory unit. Its precision parts are built up one upon another and held in rigid alignment by means of a heavy, one-piece, extruded brass frame . . . thus friction between moving parts becomes negligible. The lock is installed and removed as a unit . . . no parts to take off and put on again, no chance of misapplication. Its patented, all-ball-bearing pin tumbler cylinder and its pullman-type latches contribute to its friction-free action.

There may be other types of locks considered for a building in addition to the *Russwin Uniloc,* but the very nature of its design, construction and installation precludes the same advantages.

For projects where a superior type of competitively-priced lock is in order, count on Russwin Unilocs to meet your most exacting requirements. Russell & Erwin Division, The American Hardware Corporation, New Britain, Conn.

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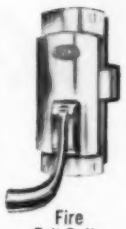
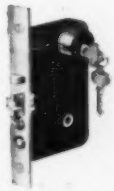


Fire Exit Bolts

Surface Door Closers

Stilemaker Locksets



"Ten Strike" Cylinder Locks

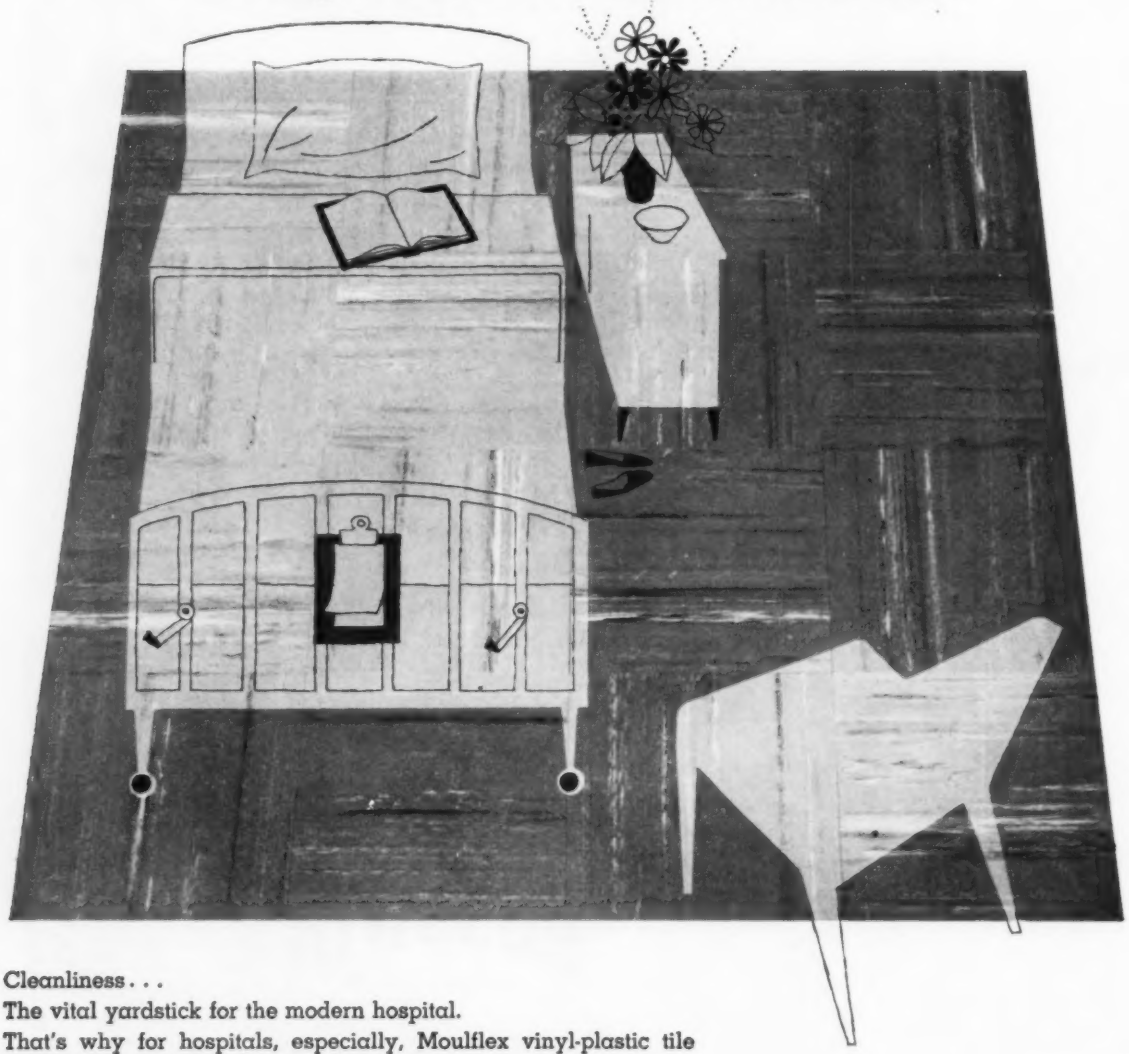
"400" Closers

Overhead Door Holders

LOCKMAKING

Moulflex TILE FLOORING

AND THE MODERN HOSPITAL



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We would be happy to send you specification data.

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The State of Construction

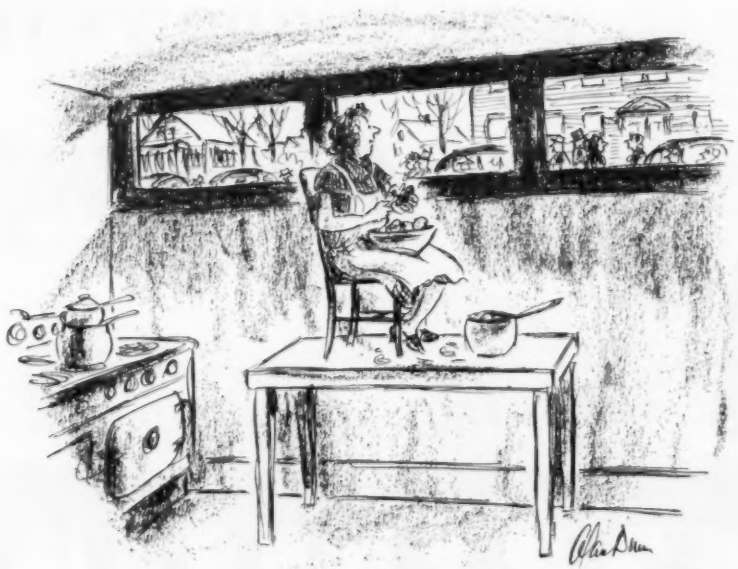
The new year did *not* break the spell — fresh from setting its tenth consecutive year of new records, the construction industry in the first month of 1956 proceeded to set some more. As reported by F. W. Dodge Corporation last month, the January totals of construction contract awards amounted to new highs for the month in every category. For details, page 400.

About Architecture

For a lot of talk about architecture, and a week to remember in some other ways, the 88th annual convention of the American Institute of Architects May 15–18 in Los Angeles looks like a sound investment. John Ely Burchard, M.I.T. dean of social studies and humanities whose 1951 convention address "Humanity Our Client" (AR, July 1951, pages 86–99) has become a classic statement of contemporary aspirations, will make the keynote address on the convention theme, "Architecture for the Good Life." The theme will be expanded in three afternoon sessions comprising seminars on general aspects of the theme, with concurrent round tables on their more specific elements. "Architecture for Safety" is the title for the first seminar (round tables on office practice, preservation of historic buildings, school buildings), "Architecture for Enjoyment" for the second (round tables on state organization, hospitals, education, specifications); the third, which has no title yet, will relate the general theme to the community. Business sessions will be held in the mornings. The Southern California Chapter, this year's "host" chapter, has scheduled a full round of tours — "seminar" tours, with architect guides, of schools, hospitals, churches and tract housing in the Los Angeles area; sightseeing tours which will cover not only downtown Los Angeles but Pasadena, Santa Barbara, Westwood-Bel Air and of course Hollywood; there is even an Orange County tour which will take in Disneyland. Special social events will include Premiere Night — described as "Academy of Motion Pictures Arts and Sciences Grand Premiere of one of the year's outstanding pictures in one of Hollywood's greatest theaters, an exciting gala night in the motion picture capital of the world" — and an architects' "Night at the Moulin Rouge." There is also a full ladies' program. And for those who don't want to stop when the convention is over, there are those post-convention tours to Hawaii and Japan arranged by the United States Travel Agency especially for the A.I.A.

SCHWEIKHER NAMED ARCHITECTURE HEAD AT CARNEGIE

The Department of Architecture at Carnegie Institute of Technology has a new head — Paul Schweikher, who has been chairman of the Department of Architecture at Yale for the past two years. Mr. Schweikher, who has also carried on a New Haven practice, at Carnegie succeeds John Knox Shear, who resigned a year ago to become editor-in-chief of ARCHITECTURAL RECORD. No successor to Mr. Schweikher at Yale was immediately announced; his resignation there will be effective with the end of the current academic year and his appointment at Carnegie in July. Mr. Schweikher, who is 53 years old, is a native of Denver, educated at the University of Colorado and Yale (B.F.A.). He was widely known as a designer when he left the Chicago firm of Schweikher and Elting to accept the Yale chairmanship. At Yale he has been associated with Douglas Orr in design of a number of new buildings for the university, and he has just been commissioned to design a fine arts center for the University of Buffalo. He is also professional adviser for the current competition for a new arts center for the city of Memphis.



Drawn for the RECORD *by Alan Dunn*

Honor to Ted Coe

Theodore Irving Coe, technical secretary of the American Institute of Architects, will receive the Institute's 1956 Edward C. Kemper Award. The award, which will be presented at the awards luncheon at the annual convention in May, has been given annually since 1950 for outstanding service to the Institute. Previous recipients were Turpin Bannister, Henry Saylor, William Perkins, Marshall Shaffer, William Stanley Parker and Gerritt J. de Gelleke.

Postscript: R.I.B.A. Medal

Walter Gropius, 1955 R.I.B.A. Gold Medalist (see pages 190–196), sends on a list of earlier foreign winners of the British honor. Here they are: 1926 — Oestberg, Denmark; 1929 — Laloux, France; 1932 — Berlage, Holland; 1935 — Dudok, Holland; 1938 — Tengbom, Sweden; 1941 — Wright, U. S. A.; 1945 — Vesnin, U.S.S.R.; 1948 — Perret, France; 1950 — Saarinen (Eliel), U.S.A.; 1953 — Le Corbusier, France.

(Continued on page 24)

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EXPERIENCE PROVES . . .

YOU CAN... *save money*

WITH WINDOWS THAT

never need painting!

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(TYPE)
A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air infiltration requirements—confirmed by Pittsburgh Testing Laboratory.
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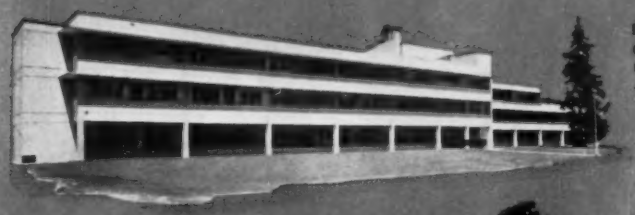
Quality Approved

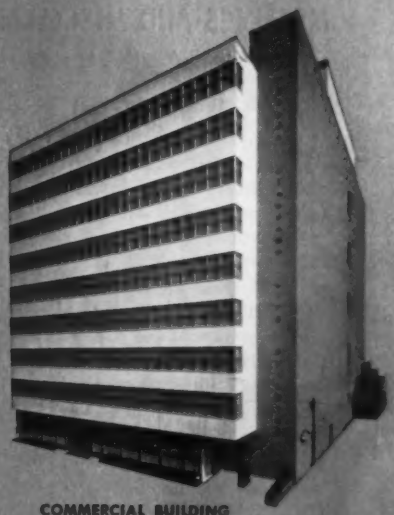
ALUMINUM



HOSPITAL
Olympic Memorial Hospital,
Port Angeles, Wash.
Architect: Gerald C. Field

SPECIAL PURPOSE BUILDING
Holy Cross Administration Bldg., Colma, Calif.
Architects: Wilton Smith & John G. Minton
Contractor: Ira H. Larsen Co.

SCHOOL
New Woodward High School, Cincinnati, Ohio
Architect: Charles Frederick Colliorius
Contractor: Frank Messer & Sons



COMMERCIAL BUILDING
Jefferson Standard Life Building, Charlotte, N. C.
Architect: J. N. Pease & Son
Contractor: Southeastern Construction Co.

ALUMINUM WINDOWS KEEP MAINTENANCE EXPENSE AT A MINIMUM

If you're interested in keeping maintenance expense at a minimum you can profit from the experience of many schools (like the one pictured on the opposite page), hospitals and other buildings erected 15 to 25 years ago with aluminum windows.

School officials, hospital superintendents and others responsible for the maintenance of these buildings are unanimous in their praise of the aluminum windows. They all report that not one penny of expense has ever been required for painting them.

Now, just think what this means to the annual school budget. Think of the money that will be saved—extra money that can be well used for salaries, for books and for other necessary items. Certainly, the selection of aluminum windows for any type building is a wise choice that will pay handsome dividends.

As you plan new schools, hospitals, apartments or commercial buildings be sure you, too, include "Quality-Approved" aluminum windows. They are the only practical, reasonably-priced windows that *never* require painting... that cannot rust or rot, warp or swell... that retain their trim, modern looking appearance for the life of the building.

"Quality-Approved" aluminum windows are available in all types—double-hung, casement, awning, projected, sliding and jalousies—to fit any exterior design.

They are made by many manufacturers (see list below) to rigid quality standards established by the Aluminum Window Manufacturers Association. For your protection and complete satisfaction be sure to insist on the "Quality-Approved" Seal when you specify or OK specifications for aluminum windows.

A WORD OF CAUTION—Remember that only aluminum is rustproof through and through. Mere surface protection against rust is not enough. Wear, unintentional scratches in delivery or installation may nullify any protective coating and soon require painting.

For additional information consult Sweet's (Architectural File, Section 16a/ALU) or any of the approved manufacturers listed below, or write for our latest "Window Specification Book". Address, Dept. AR-563.

Aluminum Window Manufacturers Association
75 WEST STREET, NEW YORK 6, N. Y.

MEMBERS: Alcasco Products, Inc., Detroit, Mich. • The Wm. Bayley Co., Springfield, Ohio • Bourne Products, Inc., El Cajon, Calif. • Ceco Steel Products Corp., *(Sterling Aluminum Window Division)*, Chicago, Ill. • Cupples Products Corp., St. Louis, Mo. • Duralite Window Corp., Knoxville, Tenn. • Fentron Industries, Inc., Seattle, Wash. • Michael Flynn Mfg. Co., Philadelphia, Pa. • General Bronze Corp., Garden City, N. Y. • Luria Building Products, Inc., Bristol, Pa. • Metal Arts Mfg. Co., Inc., Atlanta, Ga. • Reynolds Metals Co. *(Parts Division)*, Louisville, Ky. • J. S. Thorn Co., Philadelphia, Pa. • Universal Window Co., Berkeley, Calif. • Ware Laboratories, Inc., Miami, Fla. • Windalume Corp., Kenvil, N. J.

WINDOWS

THE RECORD REPORTS

MEETINGS AND MISCELLANY

(Continued from page 21)

N.A.H.B. Show — Bigger!

If the U. S. home-building industry has its troubles — like government credit moves that kept it from setting a new record *every* month last year — they did not appear to inhibit the record-breaking crowd of nearly 30,000 home builders and their cousins-in-interest who thronged the 12th annual convention and exposition of the National Association of Home Builders in Chicago January 22–26. Each year the "biggest convention ever" becomes even bigger. This year it had to spread out from the Conrad Hilton and Sherman Hotels to the Chicago Coliseum in order to house the exhibits of approximately 450 manufacturers and service organizations.

The broadening — and deepening — interests of a part of the construction industry which has mushroomed in ten postwar years to become itself a major industry were reflected in the subjects selected for discussion during the five-day program. Lot improvement, urban improvement and research all had their places along with business improvement. Prefabrication got a nod of approval not only in speeches and panel discussions but also in the attendance at booths of manufacturers of prefabricated units. The feeling seemed to be that well-designed and engineered building components are as normal an evolution in architecture and building as are modular kitchens. And the kitchen, if the number of displays is to be an indication, is just about the most important element in today's builder house. It's been color-styled, built-in and "automated" to the *nth* degree.

Architects received kudos from an unexpected quarter: the National Association of Real Estate Editors. Robert J. Lewis, president, urged home builders to look to architects for "the new excitement" in residential design that is being demanded by the public. Mr. Lewis said, "I believe the best new opportunity open to builders in 1956 is to give No. 1 priority to architectural design. The people are more and more demanding good design in everything they buy . . . homes designed by good architects sell faster, can be built more economically, and give buyers more lasting satisfaction than those in which design has been given secondary consideration."

Following the annual convention panel on house design ideas, in which participants included Neil A. Connor, A.I.A., director of FHA's Architectural Standards Division, and Richard Bennett, A.I.A., of Loebl, Schlossman & Bennett, Chicago, the N.A.H.B. Awards of Merit were made to eight architect-builder teams for producing the most outstanding new house designs of 1955. Architect winners were: Anshen & Allen, San Francisco, for a small house with excellence in interior design and economical plumbing layout; Palmer & Krisel, Los Angeles, for two houses: one with great flexibility in floor plan, separation of family room and living room and preservation of natural site features, and another that was well de-

(Continued on page 28)

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IN THE NEWS — 1. Frederick A. Fairbrother has retired as vice president and chief architect of Albert Kahn Associated Architects and Engineers, Detroit, after 40 years with the firm; a 1903 architecture graduate of the University of Pennsylvania, he had his first architectural job in Cass Gilbert's office. 2. At West Virginia A.I.A.'s Sixth Annual Craftsmanship Awards ceremony — A.I.A. Middle Atlantic Regional Director Marcellus Wright Jr., paper hanger Bryan O. Brison, carpenter Jennings R. Martin, A.I.A. President George Bain Cummings and Chapter President Charles A. Haviland. 3. The new president of the N.A.H.B., Joseph B. Haverstick of Dayton, Ohio. 4. Winner Henry S. Brinkers gets his $5000 Grand Award check from Vice President Glenn A. Hult of Ferro Corporation in the $25,000 porcelain enamel design competition sponsored by Ferro; looking on, Mrs. Brinkers. 5. New officers of Virginia Chapter, A.I.A. — Thomas R. Leachman, treasurer; Richard L. Meagher, president; Thomas K. Fitz Patrick, vice president; Fred P. Parris, secretary. 6. Another new president — Rex L. Becker, St. Louis A.I.A.

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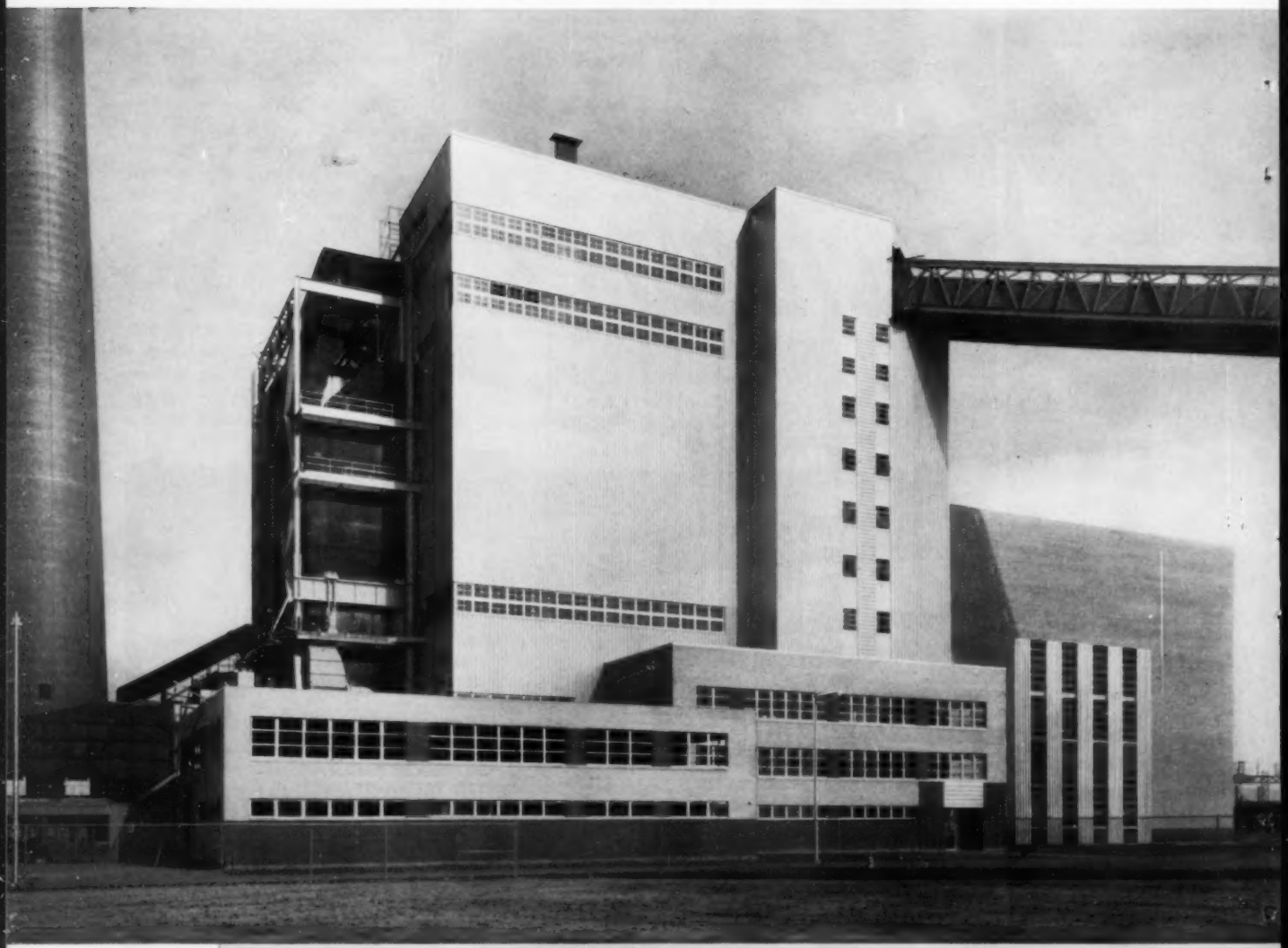
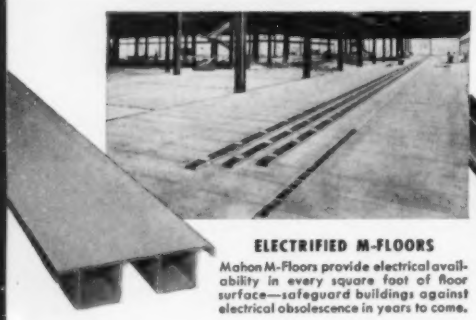


Above is the Bay Shore Station of The Toledo Edison Company. In this new, modern steam generating plant, Mahon Insulated Metal Walls with Aluminum exterior plates were employed for the high structure. The low structure is brick with an aluminum insert over the main entrance, and five aluminum pilasters dividing the glass areas in the brick section at the right. All of these inserts are constructed with Mahon Aluminum Wall Plates. Engineering Design and Construction by the Engineering Department, The Toledo Edison Company. George A. Soathoff, Consulting Engineer. A. Bentley & Sons Co., Gen. Contrs.



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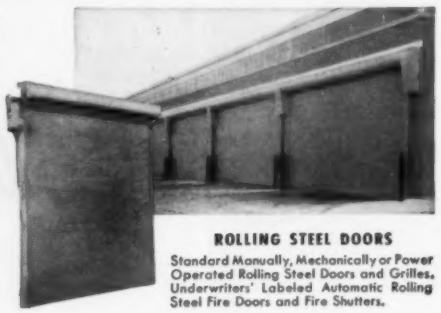

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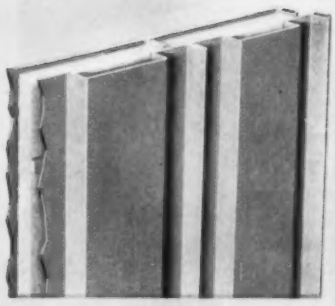

MAHON FLUTED WALL
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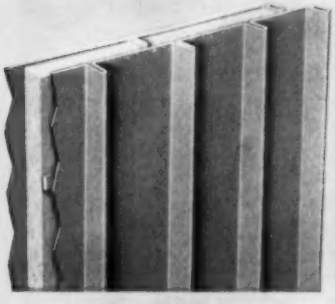

MAHON RIBBED WALL
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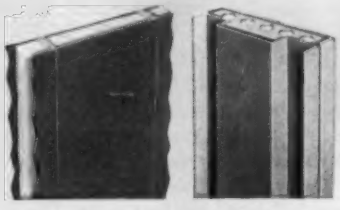

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Have a Mahon engineer call, at your convenience, and show you some interesting examples in which Mahon Insulated Metal Walls have been employed in combination with other materials to achieve attractive, individualized exteriors. The powerhouse on the opposite page, recently completed by The Toledo Edison Company, is one of many.

See Sweet's Files for information, or write for Catalog W-56.

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THE RECORD REPORTS

MEETINGS AND MISCELLANY

(Continued from page 24)

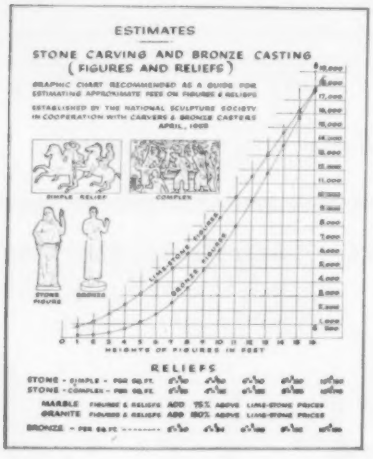
signed for a young family with children; Jones & Urmston, West Los Angeles, for coordination of interior and exterior living space and a combination bath and dressing room for the master bedroom; Seth M. Fulcher Jr. Associates, Seattle, for a split-level house showing especially sympathetic use of hillside sites; Jones & Emmons, Los Angeles, for excellent interior styling and central location of plumbing; Donald H. Honn, Tulsa, for good treatment of playroom areas and kitchen and good separation of living from sleeping areas. G. Hugh Tsuruoka, Chicago, for well-handled family traffic and unusual compartmentation of the bath.

Budgeting for Sculpture

The National Sculpture Society, 1083 Fifth Avenue, New York 28, New York, has published a revised edition of the leaflet first issued in January 1953 as a recommended guide to estimating the cost of sculpture. To the original chart, which offered a method of computing sculptor's fees on figures and reliefs of various sizes, has now been added another (see cut) which provides a guide for estimating approximate fees for stone carving and bronze casting. What the charts are intended to yield, of course, are approximate usual fees — they are, as the Society points out, useful "mainly as a guide for establishing budget prices even before the design for the sculpture is conceived" — to give the client a general idea of the costs. Price charts are available free from the Society.

Worth The Winning

The Morton Arboretum Small House Competition offers prizes and commissions totaling $15,000 for contemporary designs for small two- and three-bedroom suburban and country houses to be occupied by the Arboretum staff and to be featured in a permanent exhibit of residential landscape planting. The Arboretum, a privately endowed foundation in Lisle, Ill., has the cooperation of the A.I.A., the Chicago Building Congress and the Chicago Museum of Science and Industry in the conduct of the competition; professional adviser is Howard T. Fisher, A.I.A. Objective of the program is "to stimulate and demonstrate original thinking on the relationship between the interior and exterior of houses." Open to all comers, professional and otherwise, the competition closes May 7. Information from Mr. Fisher, 322 West Washington Street, Chicago 6, Ill. . . . The James F. Lincoln Arc Welding Foundation of Cleveland offers $20,000 in cash awards "for ideas or suggestions that will accelerate progress in arc welding" — design, engineering or the general application of the arc welding process. Information from the Foundation, Cleveland 17, Ohio. Closing date: July 30.



Jury

The nine-man panel that judged the oral presentations for the Master of Fine Arts degree at Princeton's School of Architecture in January represented a rather striking diversity of interests. It included Walter O'Malley, president of the Brooklyn Dodgers; Dr. J. Robert Oppenheimer, director of Princeton's Institute for Advanced Studies; structural investigator and innovator R. Buckminster Fuller; Canon Edward West of the Cathedral of St. John the Divine, New York; engineer Emil Praeger of New York; art historian Professor Frankl; John Knox Shear, editor-in-chief of ARCHITECTURAL RECORD; and architects Kenneth Kassler of Princeton and John C. B. Moore of New York. Among the problems presented were a new scheme for a domed stadium for the Dodgers; a proposal for completing St. John the Divine; and a proposal for a new building for the Institute for Advanced Studies.

Art for Architecture

Sculptor Isamu Noguchi has been commissioned by Tishman Realty & Construction Co., Inc. to create an original design treatment for the arcade and lobby of the 38-story office building designed by Carson & Lundin, architects, to be started shortly at 666 Fifth Avenue, New York. Mr. Noguchi has been experimenting with combinations of sculpture, light and water in an effort to create new and unusual designs for the beautification of public spaces in institutional and business buildings. . . . Another example of art for architecture was incorporated last spring into Public School 48, the Cerebral Palsy Addition, Staten Island, New York. Max Spivak designed a series of six gay and colorful mosaic panels which were set into the corridors of the Addition to make this part of the school less institutional. The panels are of real and imaginary birds, fishes and animals and are so placed that as the children walk along the halls they have something cheerful to look at and stop by. The chief architect for the Cerebral Palsy Addition was Michael L. Radoslovich and he and Mr. Spivak also chose the colors of the halls (yellow tiles, etc.) to help create a happy mood. . . . In the foreign field an enormous sculpture piece by Naum Gabo is planned for the Bijenkorf Department Store, Rotterdam, Holland, to be done this September. The architects, Marcel Breuer and A. Elsas, had the idea for a piece of sculpture on this scale and Gabo says ". . . the origin of the conception lies in the organic structures found in the vegetable world; especially in the structure of trees." The piece, which will be attached to the side of the building, will be 82 feet high. It will emerge above the pavement in two slightly curving prestressed concrete trunks with steel branches and an inner core of bronze wire springs stretched over a steel skeleton, all meeting at the crown of the structure.

(More news on page 32)

ANACHRONISM — Leaded-glass ceiling covering an area of 6500 sq ft over main banking floor of Union Dime Savings Bank at the northwest corner of Sixth Avenue and 40th Street, New York City. It was demolished along with the monumentally refined edifice designed by the late Alfred Taylor for erection in 1909; a 32-story office tower designed by Kahn & Jacobs will be built on the site

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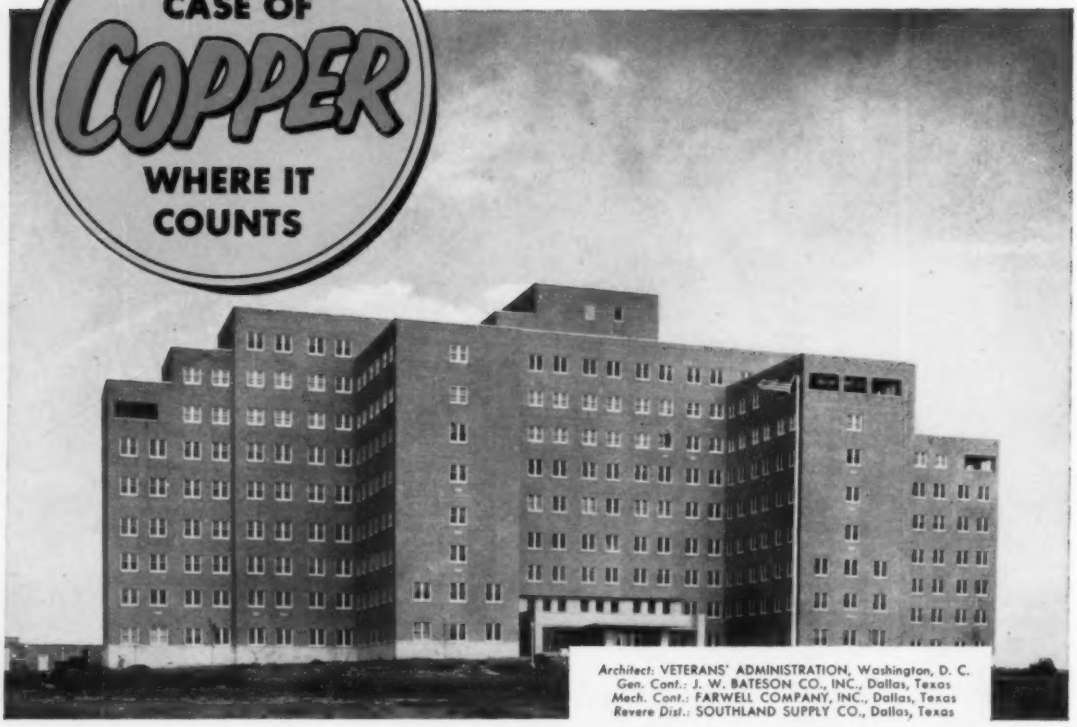

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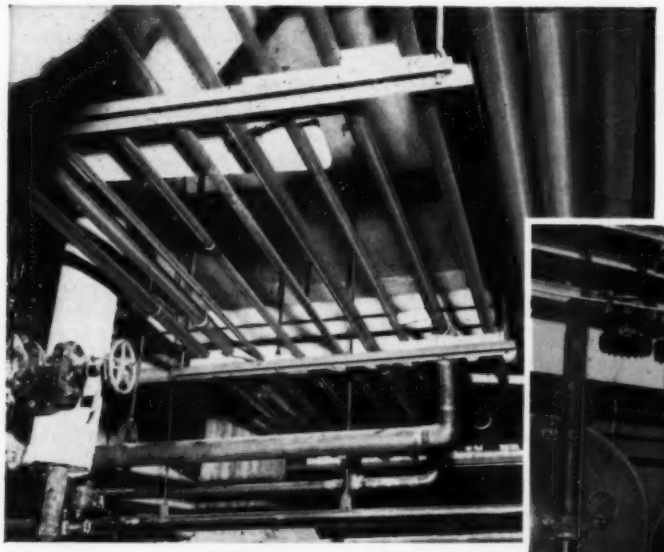
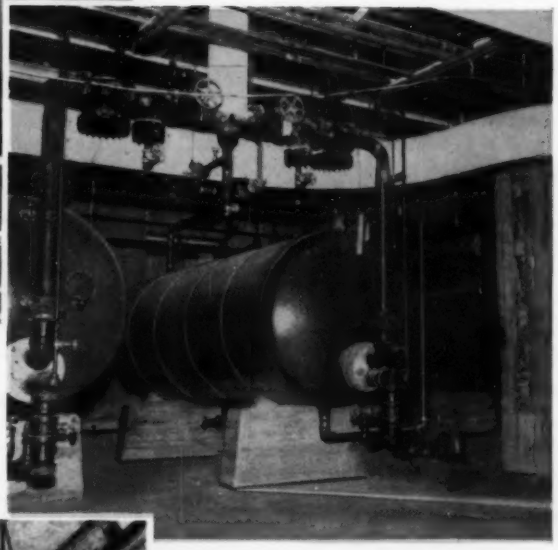


MAIN PIPE RUNWAY showing the hot and cold water, air and oxygen lines of Revere Copper Water Tube.



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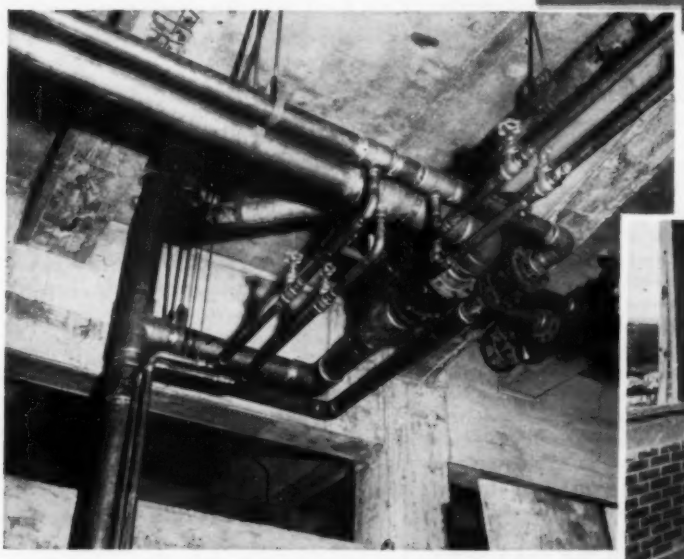

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INDIVIDUAL ROOM OXYGEN LINES of Revere Copper Tube with brazed joints guard against dangerous leaks.

THE FIRST NATIONAL PUBLIC WORKS CONFERENCE

The National Conference on Public Works held January 16–17 at The Octagon, national headquarters of the American Institute of Architects, under the joint sponsorship of the American Society of Civil Engineers, the A.I.A. and the Chamber of Commerce of the United States, marked a milestone in the relations between the professions and the Federal government. It served a valuable purpose in calling public attention to the importance of construction other than housing; in fact, one of the prime incentives leading to the holding of such a conference was the conviction on the part of architects and engineers that too much emphasis was being placed on the housing subject. This, they felt, has been creating an imbalance in the public mind regarding relative value of construction types.

The conference also served to focus attention on the increasingly significant A.I.A. role of liaison with Federal departments and agencies, Congress and other segments of the construction industry. Edmund Purves, the Institute's executive director who guides this effort, sees a new trend toward greater understanding and appreciation by the government of the importance of architecture — real architecture — in public buildings. He has predicted that this will result in a new spirit in all government architecture within 10 years or less.

No firm decision was made on a second national public works conference, but the leaders agreed that others should be held to keep the balance of construction types in proper public focus and to clarify and strengthen professional ties with government programs.

The meetings were conducted on an informal basis with question and answer exchanges following papers.

The roundup of speakers' remarks which follows constitutes a significant capsule survey of architectural programs, practices and attitudes of key Federal agencies concerned with construction:

Fred S. Poorman, deputy commissioner, Public Buildings Service, General Services Administration — Much of GSA's property is very old. Problems are complicated by the fact Federal employment has doubled over the years. The program of "tempo" removal in Washington is going ahead with appointment of an overall administrator. Under the lease-purchase program, 26 projects with overall limit of cost of $91,436,330 were authorized for fiscal 1956. Direct appropriations to GSA, or sponsoring agencies initiating projects having a limit of cost of approximately $140 million were made for fiscal 1956. The original program has a three-year duration; GSA is anxious to have this extended. A huge modernization program in Federal buildings supplements the new construction.

Dr. John W. Cronin, medical director and chief, Division of Hospital and Medical Facilities, U. S. Public Health Service, Department of Health, Educational and Welfare — He traced the development of the Hill-Burton hospital construction program from its inception. An estimated 50 per cent of existing facilities are obsolete. To meet population increases, 32,000 new beds are needed annually; to replace obsolete facilities, 8000. An outlay of $640 million a year would be required to keep abreast of requirements. The average has been $580 million. Result: a 100,000 bed deficit has not been touched although more than $2 billion worth of facilities are involved in the H-B program.

Dr. Rall I. Grigsby, assistant commissioner and director, Division of School Assistance in Federally Affected Areas, Office of Education, Department of Health, Education, and Welfare — A 25 million pupil load in 1950 jumped to 30 million in 1956 and can be expected to go to 37 million in 1960. Need for next five years is for 470,000 new classrooms: 210,000 to take care of the increases in pupil load, 80,000 to relieve current demands, and 180,000 to replace obsolete facili-

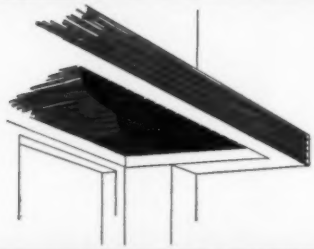
(Continued on page 320)

VOICE OF THE ARCHITECT

For the important officials in Federal construction agencies, "the architect" (generic) has come to mean a very particular person—the executive director of the American Institute of Architects, Edmund R. Purves. Ned Purves himself is easily able to remember when this was not so. He recalls that in 1940 and 1941, when he served as chairman of an A.I.A. government relations committee, the liaison now taken so much for granted was virtually non-existent. He was asked to come to Washington from a position as member of the A.I.A. Board of Directors specifically to improve relations with the Federal government. Nine months later he entered military service for two and a half years, but he returned to his post again in 1945 and has been at it since. Mr. Purves can think of many individuals who should share credit for improved government understanding of architecture and architects. He enumerates the A.I.A. presidents, "giants in their field," many leaders of other segments of building. "There is a great deal of cooperation in the construction industry despite numerous utterances to the contrary," he believes. Perhaps the advancement in government-professional relations is best illustrated by Mr. Purves' remark that administratively the Federal agencies no longer make major policy decisions without informing the A.I.A. And most often such decisions follow consultation with Mr. Purves and his staff. This applies to all agencies concerned with design and construction. As for the Congress, not too long ago the Institute was rapping on doors to be heard. But no longer. Now A.I.A. seldom makes a request for appearance on Capitol Hill; it is called upon for expert testimony. "We stand for maintenance of the prestige of the profession and the American Institute of Architects," Mr. Purves declares. "The secret of our success, I think, lies in the maintenance of friendly relations and in creation of that image of the prestige and integrity of the profession." Looking to the future, Mr. Purves is convinced that more work must be done at the state and municipal levels in this matter of government relations. This means intensified A.I.A. chapter effort. Washington headquarters advises and guides the chapter groups, but each handles its own problems in its own way. Some state associations already have the matter under excellent control, he said, but others must improve their relations with their government units, each in its own way. There is no pat set of rules for playing the Washington game, Mr. Purves points out. But the A.I.A. has a single objective —to advance the cause of planning and design. "There are no overall Federal programs, so the agencies progress or fail to progress as their own programs are established and their policies laid out. We are not dealing with one entity here, but with a whole collection of entities. Each agency must be consulted in its different capacities and goals. Architecture cannot progress unless it has the understanding of the public." And finally, he adds, the Institute must never be afraid to face an issue and speak its mind.

(More news on page 36)

ADDED ATTRACTION



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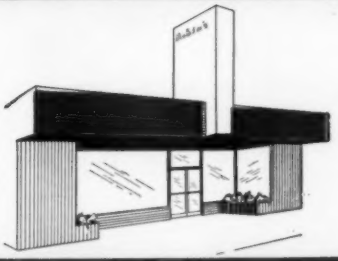

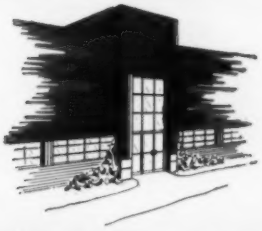

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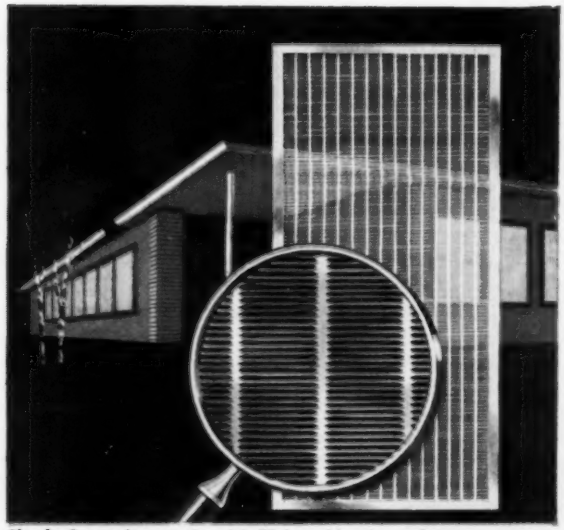
Facades and Marquees made with strong Kaiser Aluminum have an ideal variety of texture finishes . . . may be painted, anodized, embossed, enameled, lacquered, and porcelainized by standard methods. They weather uniformly, never rust, never stain—require minimum maintenance. Lightness lowers erection costs. Available in flat, corrugated or specially designed panels. Their application provides a distinctive quality to any building . . . and helps assure client satisfaction.

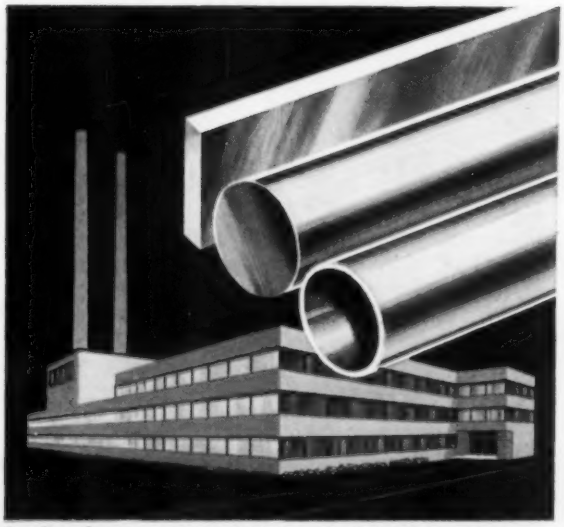
To improve your construction . . .

PROFIT FROM ALUMINUM'S "BUILT-IN" VALUES

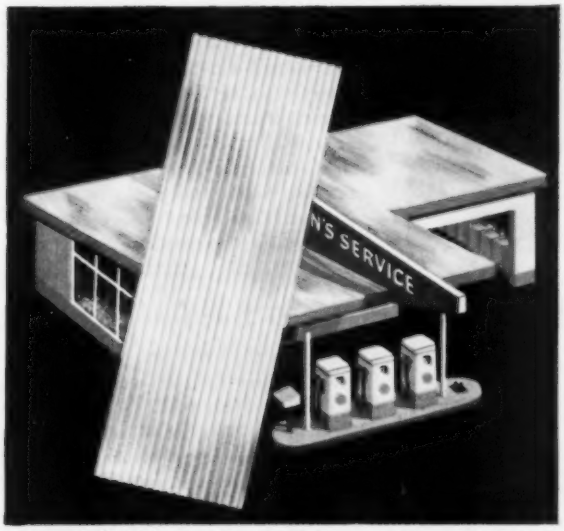
- Lightness with strength
- Heat and electrical conductivity
- Beauty
- Heat and light reflectivity
- Corrosion resistance
- Workability
- Economy



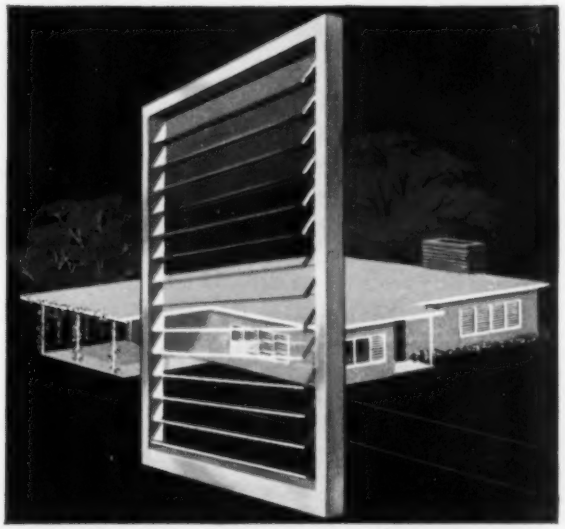
Shade Screening made with Kaiser Aluminum keeps rooms up to 15° cooler. Tiny louvers set at an angle block hot sun rays. Protects furnishings from sun fading. Clean, modern design gives window exteriors new, fresh beauty.



Bus Duct Systems made with high conductivity Kaiser Aluminum cost less than copper. Light weight results in easier, faster installation—another saving. High strength yet workable. Available in rectangular, solid round bar and tubular conductor.



Corrugated Roofing made with Kaiser Aluminum reflects heat . . . helps provide winter warmth, summer coolness. Light reflectivity brightens interiors. Needs no paint—requires minimum maintenance. Ideal for industrial or commercial buildings.



Window Jalousies made with Kaiser Aluminum resist corrosion—defy time and weather. Handsome, natural finish enhances building's appearance, complements any design. Easy to install. Simple to operate.

think of Kaiser Aluminum

SINCE World War II, aluminum has been used more extensively in the building industry than in any other civilian application.

This spectacular conversion is the result of aluminum's *combination* of "built-in" advantages—advantages that make possible new patterns of design, usually with substantial overall savings.

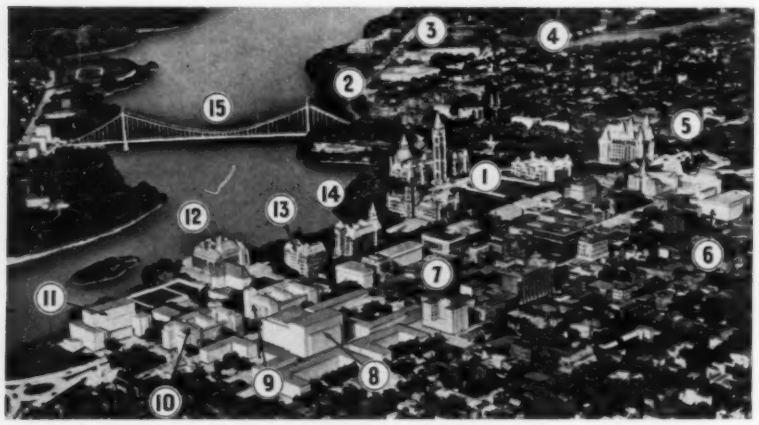
As a basic producer of aluminum our efforts are dedicated to the job of serving manufacturers—helping to improve their products and to reduce their costs.

Engineering assistance is available from our qualified aluminum engineers. Or for names of building products manufacturers who will be glad to work with you, contact the Kaiser Aluminum sales office listed in your telephone directory. Kaiser Aluminum & Chemical Sales, Inc. *General Sales Office,* Palmolive Bldg., Chicago 11, Illinois; *Executive Office,* Kaiser Bldg., Oakland 12, California.

FOR THE NATIONAL CAPITAL: A MASTER PLAN AT WORK

The Federal District Commission, issuing its 56th annual report at the end of 1955, observed that the end of the year also saw the tenth anniversary of the National Capital Plan.

At the same time, the Commission released a photograph of its model of the capital (below) showing final plans for the "Government Row" area. The key: (1) Parliament Hill; (2) National Research Council, facing newly rebuilt Sussex Drive; (3) 24 Sussex Drive, official residence of the Prime Minister; (4) Government House; (5) Confederation Square and the National War Memorial; (6) temporary National Art Gallery Building (project), scheduled for immediate construction, and to be used until Cartier Square, currently taken up by temporary wartime buildings, becomes available for a permanent gallery; (7) Bank of Canada, with proposed office buildings on either side; (8) National Auditorium (project); (9) and (10) Veterans Memorial buildings, of which the East Memorial Building (9) is completed and occupied by the Department of Veteran Affairs, while the West Memorial Building (10), now under construction, will house the Department of Trade and Commerce; (11) the National Library, on which construction is scheduled for 1956; (12) the Supreme Court; (13) Justice Building; (14) Confederation Building; and (15) proposed Interprovincial Bridge to replace the existing Ottawa-Hull bridge.

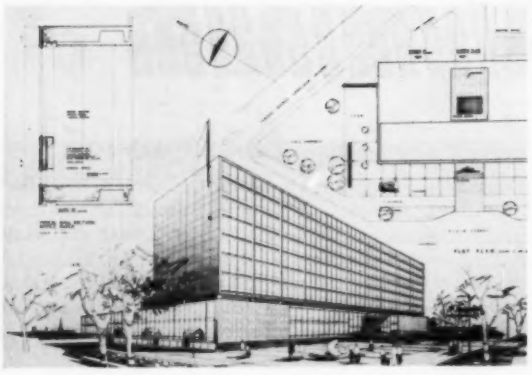


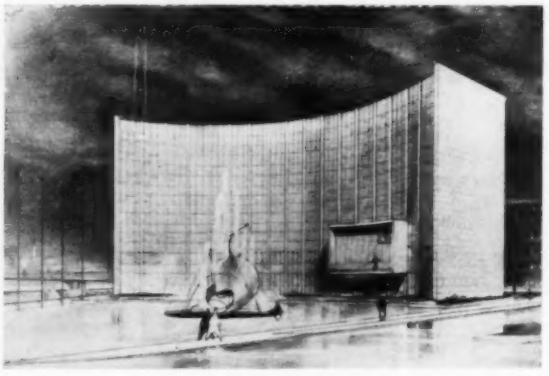
Among its accomplishments for 1955, the Commission counted the opening of the new Walkley rail yards the most important. The yards, in addition to cutting out 75 per cent of Canadian Na-

(Continued on page 40)

FOR THE CITY OF OTTAWA: PROJECT FOR A CITY HALL

Winner of the $5000 first prize (1) in Ottawa's competition for a city hall (AR, November 1955, p. 30) was the Montreal firm of Rother, Bland, Trudeau; the jury commended the "spacious and generous" entrance hall, the circular stairs to the Council Chamber and the "dignified restraint" of the exterior. The $1500 second award (2) went to Toronto architect K. Sinclair Lawrie, and the $1000 third award (3) to Wasteneys and Wilkes, Toronto.





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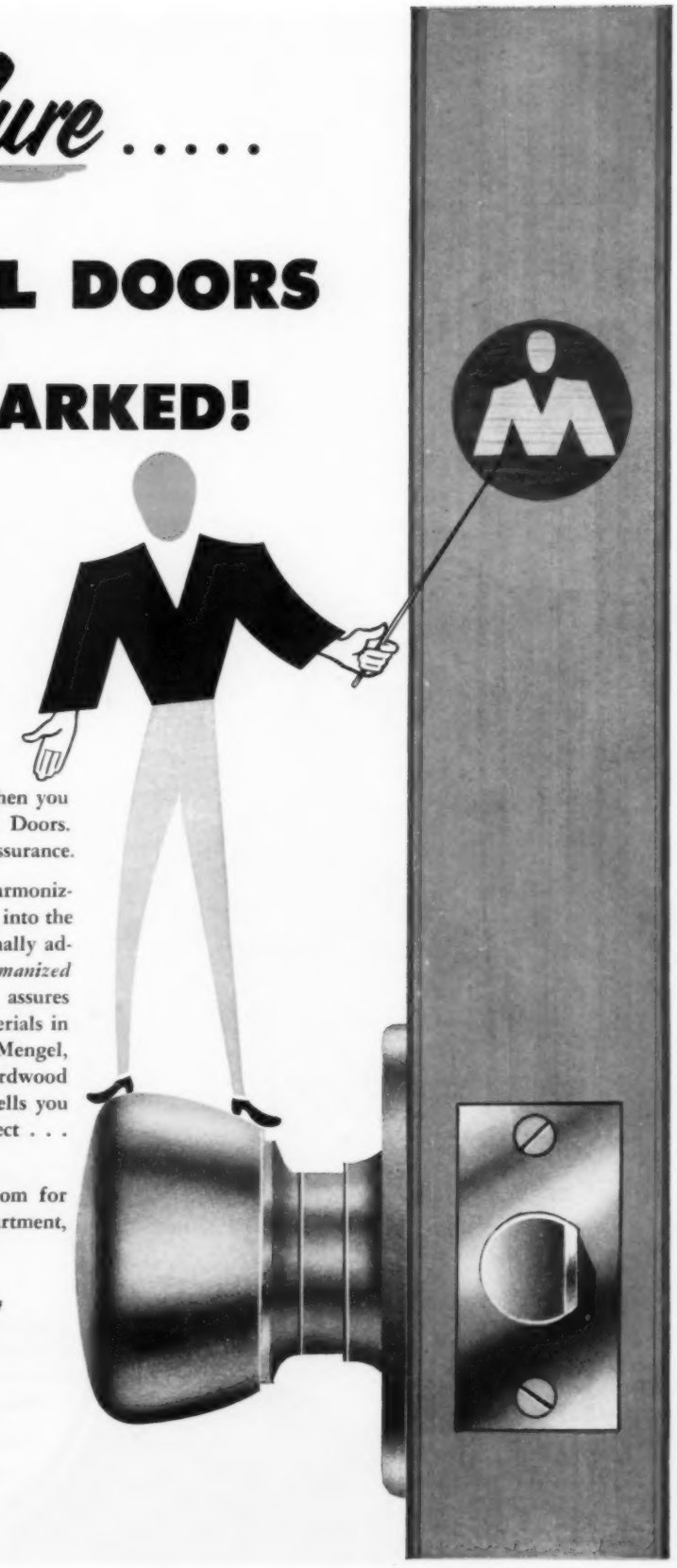

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This famous symbol, in a distinctive, harmonizing wood dowel, is now built permanently into the stile of every Mengel Flush Door. Nationally advertised and recognized in Mengel *Permanized* Furniture, the 'Mengel-Man' trade-mark assures unquestioned workmanship and finest materials in Mengel Flush Doors. Assurance backed by Mengel, the world's largest maker of fine hardwood products. The 'Mengel-Man' trade-mark tells you now you're getting the quality you expect . . . when you specify Mengel Flush Doors!

Look for this symbol. It leaves no room for doubt . . . *or disappointment.* Door Department, The Mengel Company, Louisville 1, Ky.

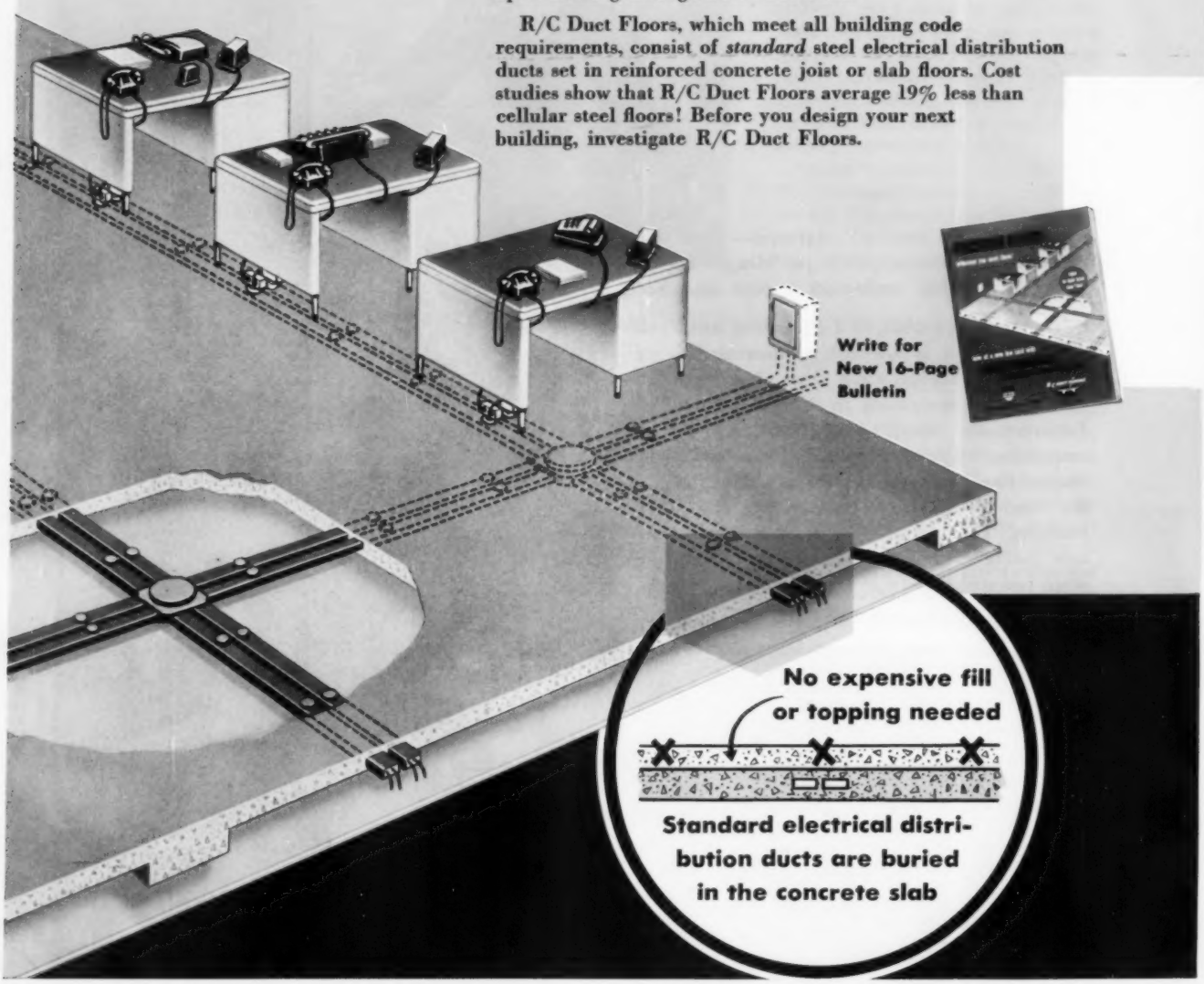
Mengel Doors equal or exceed the requirements of Bureau of Standards specifications CS200-55

R/C DUCT

provide 100% electrical flexibility

For this distinguished, 12-story office building, the architects chose a reinforced concrete frame with shallow beam and flat slab R/C Duct Floors which provide a complete network of underfloor electrical outlets for power, light, telephone, and intercom systems—at a new low cost. Outlets can be connected to convenient risers in a matter of minutes without ripping up or drilling through floors and ducts.

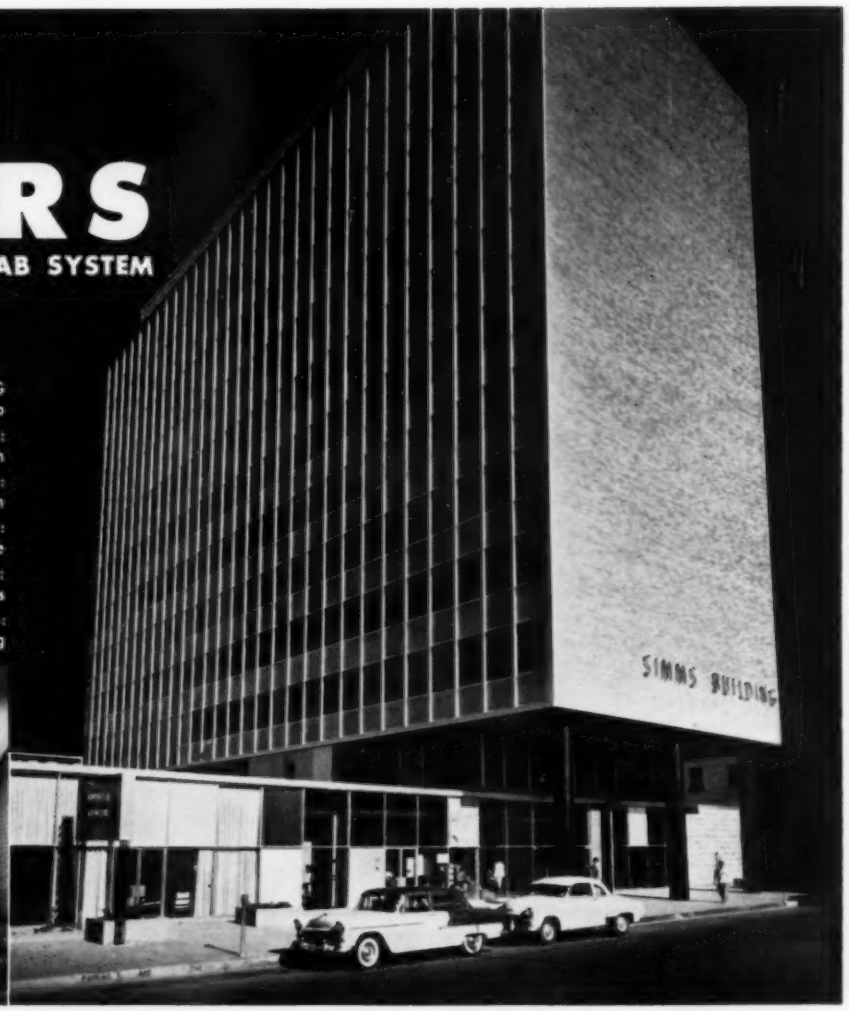
R/C Duct Floors, which meet all building code requirements, consist of *standard* steel electrical distribution ducts set in reinforced concrete joist or slab floors. Cost studies show that R/C Duct Floors average 19% less than cellular steel floors! Before you design your next building, investigate R/C Duct Floors.



FLOORS

SHALLOW BEAM AND SLAB SYSTEM

SIMMS BUILDING
Albuquerque, New Mexico
Architects:
Flatow, Moore, Bryan, and Fairburn
Mechanical Engineers:
Bridgers and Paxton
Electrical Engineer:
M. V. McIntyre
Structural Engineer:
E. M. Hicks
General Contractors:
Lembke, Clough, and King



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FOUNDED 1924

An outstanding example of the simplicity of architectural detailing and design flexibility achieved by the use of reinforced concrete is the new Simms Building in Albuquerque, New Mexico. The building is framed in reinforced concrete, employing a shallow beam and slab system. The architect, Garlan D. Bryan, states, "When the question of fireproofing for steel structure was analyzed, comparison figures showed that reinforced concrete would be cheaper in initial construction and in the lower insurance rates for this location." On your next job . . . design for reinforced concrete.

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38 South Dearborn Street • Chicago 3, Illinois

THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 36)

tional Railways cross-town traffic, relieved a right-of-way for the projected Queensway, a limited access highway on which construction is to begin this year.

Chairman of the National Capital Planning Committee is C. G. Cowan of Ottawa; Jacques Gréber, French planner, is consultant to the Federal District Commission.

KILNOISE ACOUSTIC PLASTER STOPS SCHOOL FIRE!

This schoolroom ceiling, surfaced with Kilnoise Acoustic Plaster, resisted intense flames for two hours.

Corridor outside burned room (with window lights replaced). No damage except soot-soil.

Adjoining room. No damage except from smoke which seeped through joints of the cinder block.

Fire raged for two hours... was confined to One Room

Thomas H. Hewlett, the architect (O'Dell, Hewlett and Luckenbach) believes schools should be fireproof. He also believes schools need sound control. It is his conviction that only with acoustic plaster can ceilings be both fire retardant *and* acoustically correct.

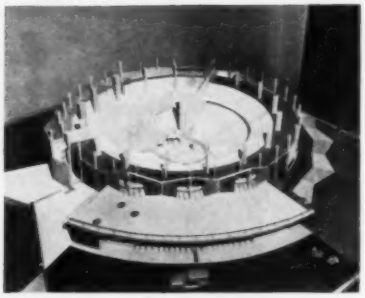
Acoustic plaster is specified by Mr. Hewlett for all the ceilings of all his schools—and justified by the results of this fire at Lockman School in Royal Oak, Mich. His opinion, shared by the school superintendent, is that no other acoustical material could have confined this fire as well as acoustic plaster.

Smoke poured out of the ventilating windows onto corridor ceiling. But the flames were stopped cold. For there was KILNOISE Acoustic Plaster, too.

What about the soot on the corridor ceiling? No problem, with KILNOISE. It can be scrubbed without harm; or it can be painted over. Either way, the hard plaster surface of KILNOISE is not disturbed, and the NR factor remains at a guaranteed minimum of .60.

KILNOISE is a product of KELLEY ISLAND COMPANY division of Basic Refractories Incorporated, Cleveland.

KILNOISE



PERMANENT THEATER PLANNED FOR SHAKESPEARE FESTIVAL

Actors and audience will have a permanent theater at Stratford, the Stratford Shakespearean Festival Foundation hopes, in time for the 1957 season. The new building will replace the tent which has housed the festival since its inception in 1953.

The permanent theater will be of steel-frame construction with a suspended copper roof. The seating capacity, of 2000, is about the same as that of the tent, but the seats will be more widely spaced and the addition of a balcony will make up the difference. The modified theater-in-the-round plan is also like that of the tent, and is an attempt to recall an Elizabethan-type theater.

The architects are Rounthwaite and Fairfield of Toronto.

MATERIALS AND APPRENTICES TOPICS AT C.C.A MEETING

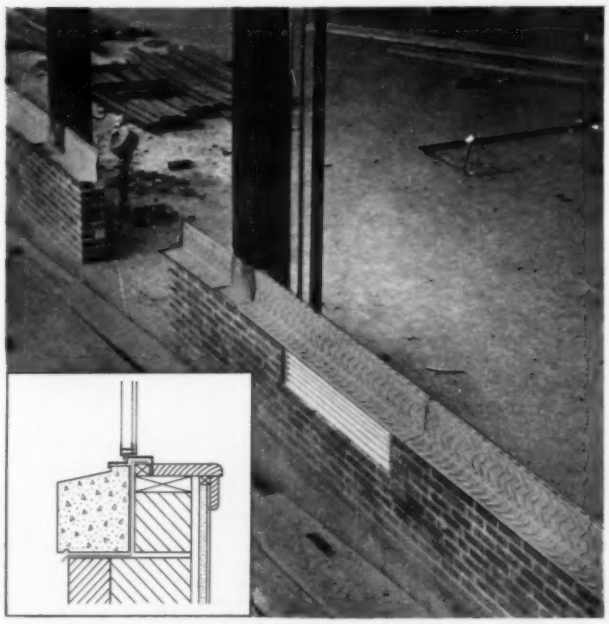
Over 800 delegates met in Winnipeg on January 15–18 for the 38th annual convention of the Canadian Construction Association. The most serious problems discussed were, once again, apprenticeship and material shortages.

In his annual address, retiring president W. G. Malcom of Winnipeg stated that building is proceeding at so fast a rate that the supply of materials and trained workers cannot keep up with it. "The ability of the construction indus-

(Continued on page 44)

Another new school protected by Anaconda Through-Wall Flashing

THE NEW SOUTH JUNIOR HIGH SCHOOL, BROCKTON, MASSACHUSETTS
Architect: Edmund L. Leeds & Associates, Allston, Mass. **Sheet Metal Contractor:** Gilbert & Becker, Dorchester, Mass. **Distributor:** Brown-Wales Company, Cambridge, Mass.



This photo taken during construction of the new South Junior High School shows Anaconda Through-Wall Flashing set in place for continuous protection at window sill level. **Insert:** Cross section view through wall showing location of Through-Wall Flashing at sill level.

Here's why the Anaconda Flashing is preferred:

EFFICIENT DESIGN: The embossed zigzag corrugations give thorough bond in the mortar and equal resistance to lateral movement in all directions. The precision-stamped dam and corrugations are integral and of equal height. The smooth, flat selvage can be easily bent to form a counter flashing without causing humps or ridges that would prevent free drainage.

POSITIVE PROTECTION: In parapet construction, the Anaconda Flashing is installed so that the tongue edge of the dam is within ¼" of the outside face of the wall giving maximum protection against moisture infiltration. There is still sufficient bed for pointing the joint. The integral stamped dam and corrugations prevent accumulated water flowing lengthwise of the flashing and re-entering the masonry at the lap joints.

EASY INSTALLATION: The Anaconda Through-Wall Flashing is installed easily and quickly, with a minimum of delay to bricklayers and masons. Tight end joints can be made by overlapping one or two corrugations. The smooth selvage is easily bent or cut on the job to accurately fit the construction. Machine-stamped corner pieces for both 8" and 12" walls are available and make a neat, workmanlike job. Soldered miter joints or bulky laps are eliminated. 5558

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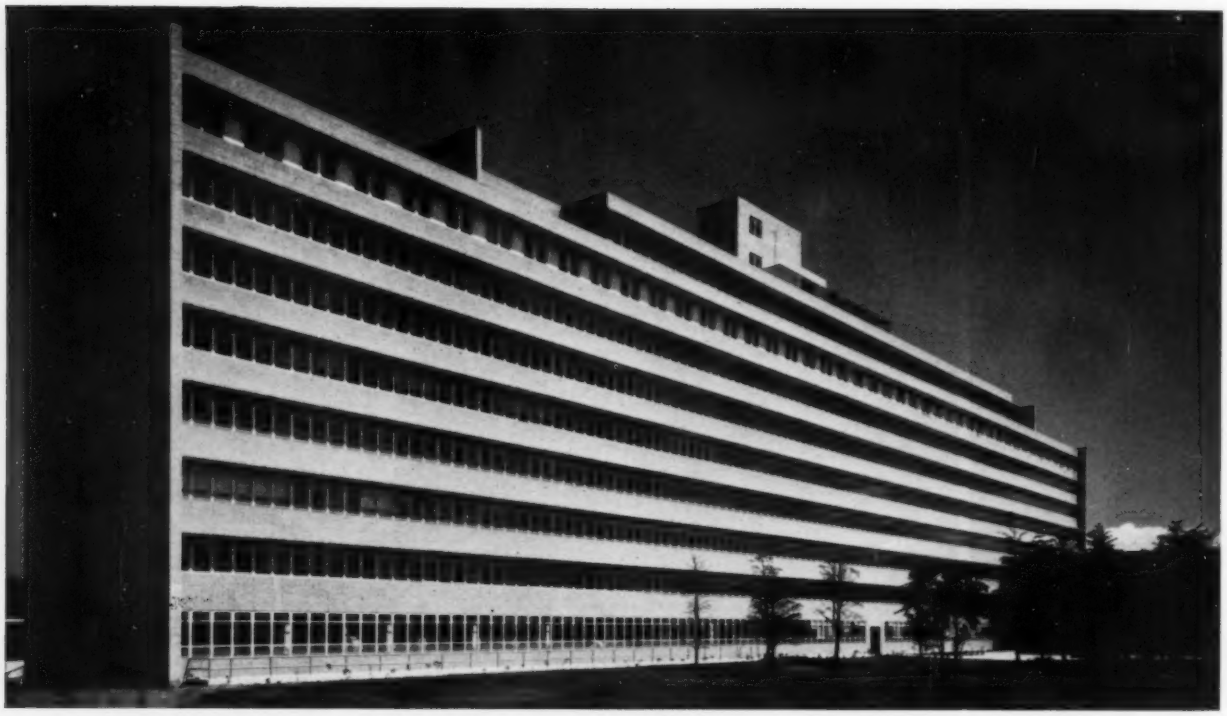

Veteran's Hospital, Seattle, Washington. *Equipped with B&G Pumps.* Architects: *Naramore, Bain, Brady and Johanson, Seattle.* Engineers: *Bouillon and Griffith, Seattle.*

For heating or cooling water

For all-year comfort conditioning, the advantages of water have made it the preferred medium. The quality of the equipment used to heat, cool, and circulate water, therefore, becomes of major importance to the designing engineer.

B&G presents a line of equipment specifically designed to meet the exacting requirements of a satisfactory water system. The B&G Universal Pump, for example, with *noise and vibration engineered out*... velvet-smooth in operation. For cooling, the B&G Package Liquid Cooler offers a completely integrated unit, alive with features for more economical performance, easier installation. And for the many applications where water-to-water or steam-to-water heat transfer is required, B&G Heat Exchangers provide large capacity in compact, efficient units.

If you haven't a complete file of B&G literature on heating and cooling equipment, write today. Remember, too, that the B&G engineering staff is always available for consultation.

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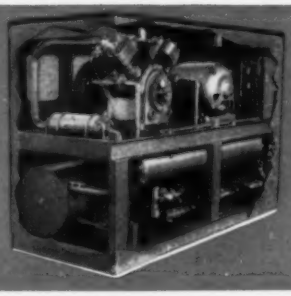

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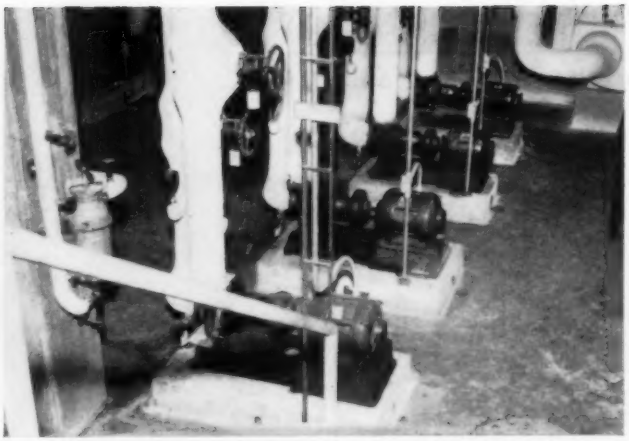
An engineering achievement which challenges comparison! Built in capacities from 3 to 100 tons, these units incorporate many special features as standard equipment. Completely self-contained... virtually a plug-in unit. Send for Bulletin HB-755.

B&G Type "WU" Heat Exchanger
An extremely versatile, instantaneous water heater with a wide range of applications. It is equipped with a B&G Booster Pump, which circulates boiler water through the shell under thermostatic control. Pumped circulation plus efficient internal design, enables a comparatively small unit to produce a large volume of hot water.



● **Apartment Building, Chicago, Illinois** *(upper left). Quiet B&G Universal Pumps are used to boost city water pressure.*

● **Illinois Institute of Technology faculty apartments, Chicago** *(lower left). Equipped with B&G Universal Pumps and Heat Exchangers.* **Architects:** *Mies van der Rohe, Pace Associates, Associated, Chicago.* **Heating Contractor:** *Wm. A. Pope Co., Chicago.*

● **Combination heating-cooling system** *(above). B&G Universal Pumps circulate heated and cooled water through the same piping system.*

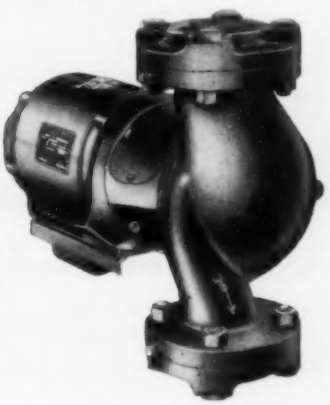
and circulating it ***Noiselessly***

B&G Universal Pumps

In every detail designed and built for *silent, vibrationless* operation!

The motor is specially constructed, tested and *hand-picked* for quietness. Sleeve bearings in both pump and motor...suspension in ring-type rubber mountings and flexible spring couplers, all contribute to velvet-smooth performance.

Other features include the diamond-hard, leak-proof "Remite" Seal, oil lubrication and hydraulically balanced impeller. The removable bearing frame permits servicing without breaking pipe connections—*all the advantages of split case design!*



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THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 40)

try to expand its capacity has been dramatically proven on several occasions during the last 15 years," he said, "but the increased demands for the industry's services have been such that construction schedules are being held up by delays in the delivery of a number of materials.

A distributing center is planned for Halifax by Canadian Industries (1954) Limited; the building, which will have a steel frame "sheathed" with tile, will contain offices and warehouse space. J. Philip Dumaresq, of Halifax, is the architect

"Similarly, our training program for practically all personnel classifications has failed to keep up with the pace of the industry's expanded volume. The number receiving apprenticeship training should be at least doubled and there is a chronic shortage of engineers, superintendents, estimators and other skilled men."

Of the outlook for 1956, Mr. Malcom predicted that, despite some curtailment in bank credit, increase in the volume of construction would more likely be limited by the shortage of structural steel than by shrinkage of capital. Taking a still longer look at the future, Mr. Malcom said that the construction industry should establish a greater sense of direction and purpose. A basic requirement, he felt, was maintenance of construction costs at levels that would encourage investment.

Hon. Milton F. Gregg, Federal Minister of Labor, addressed the delegates on the subject of winter employment in the construction industry, and cited prejudice, habit and misunderstanding as the main obstacles to winter work.

A. Turner Bone, president of the J. L. E. Price & Co. of Montreal, was elected president.

NEWS NOTES

Office buildings are expected to get an even greater share of the construction dollar this year than they did in the record year of 1955, according to the *Financial Post*. . . . **The Manitoba Association of Architects** will hold its annual meeting on Saturday, April 28, in the library of the University of Mani-

(Continued on page 46)

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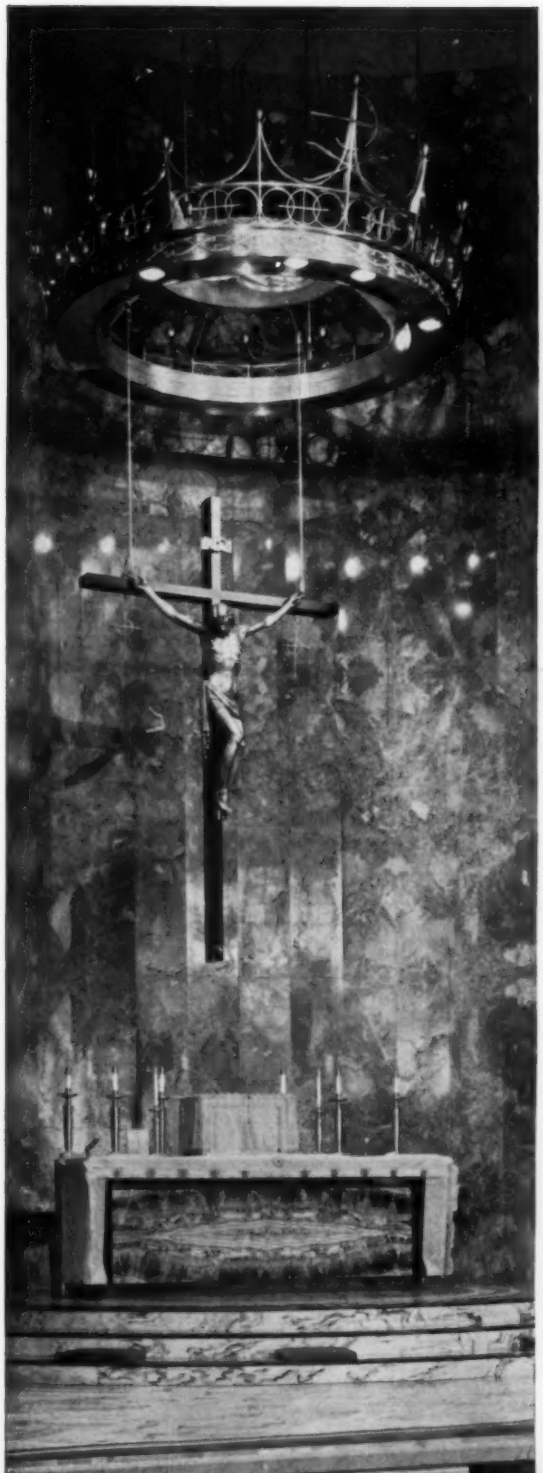

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used in this distinguished modern church helps provide these important benefits: (a) light and airy appearing church due to use of large glass areas, without penalties of cold drafts or excessive solar heat; (b) people attending weddings, funerals and other services leave church without feeling and looking wilted in hot weather, no drooping altar candles; (c) closed windows reduce cleaning bills and outdoor noises; (d) increased attendance due to greater year 'round comfort.

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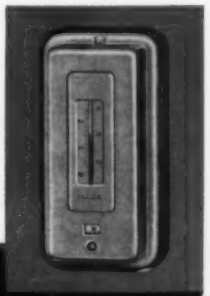

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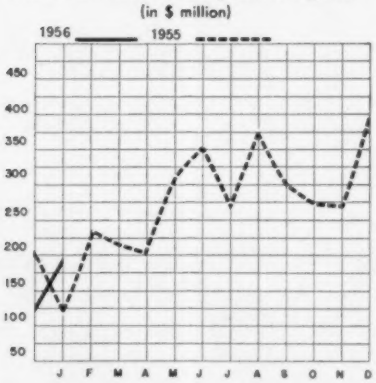
NEWS FROM CANADA

(Continued from page 44)

toba at Winnipeg; the meeting will be followed by the annual dinner at the Royal Alexandra Hotel. . . . Election results from the **Ontario Association of Architects:** the 1956 council is composed of Alvin R. Prack, Hamilton; Philip Carter Johnson, London; Watson Balharrie, Ottawa; E. C. S. Cox, George D. Gibson and G. Everett Wilson, Toronto; George Y. Masson, Windsor; and Lynden Y. McIntosh, Fort William; the 1956 registration board is composed of Logan C. V. Gallaher, Kingston; Eric W. Haldenby and E. H. Madill, Toronto; William R. Souter, Hamilton; and William A. Watson, Belleville. . . . **The Royal Architectural Institute of Canada** has reduced the prices of its legal documents; they may now be purchased through the R.A.I.C. executive office and provincial association offices only. . . . A new **Schedule of Minimum Professional Charges and Conditions of Engagement** has been published and distributed to members of the Ontario Association; additional copies are available from the O.A.A. office at $.15 each. . . . An **exhibition of U. S. architecture,** shown in photographs and models, was held by the Architectural Society of the University of Toronto at Victoria College during January; it was arranged with the cooperation of the American Institute of Architects. . . . **William Zeckendorf,** New York realtor and president of Webb & Knapp Inc., recently discussed the redevelopment of downtown areas for the Montreal Real Estate Board and its architect guests.

Contracts Awarded: Comparative Figures*
(in $ million)



*Compiled by the editor and staff of *The Building Reporter*, from information collected by MacLean Building Reports

(More News on page 48)

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PRESIDENT PROPOSES WIDER HEALTH FACILITIES GRANTS

Congress appeared generally receptive to the proposals submitted to it late in January in President Eisenhower's special message on health, including the recommendation for a five-year $250 million Federal program for expanding construction of medical research and teaching facilities. The only point of contention seemed to be whether the President had asked *enough* money; Democrats introduced measures providing $340 million for the same purposes.

Under the President's plan, $210 million would be made available for research and teaching facilities in medicine, osteopathy and public health and $40 million for research and teaching in dentistry. Grants would be given for varying amounts up to 50 per cent of construction costs.

The President also called for a two-year extension of the Hospital Survey and Construction Act (Hill-Burton) beyond the end of 1957. This would carry the program, which so far has provided financial aid for 2650 projects with an aggregate total construction cost of more than $2.2 billion, to July 1, 1959.

Of the $130 million requested to finance the program in fiscal 1957 — a $19 million increase over the 1956 level — $40 million is earmarked for diagnostic centers, chronic disease hospitals, nursing homes and rehabilitation facilities. This would account for the entire $19 million increase in the total requested; the 1956 expenditure for these facilities was $21 million. The general hospital program would get $88 million, or the same as 1956.

The $40 million for special facilities is tentatively allotted as follows: diagnostic centers, $13,300,000; chronic disease hospitals, $13,300,000; rehabilitation centers, $6,670,000; nursing homes, $6,670,000.

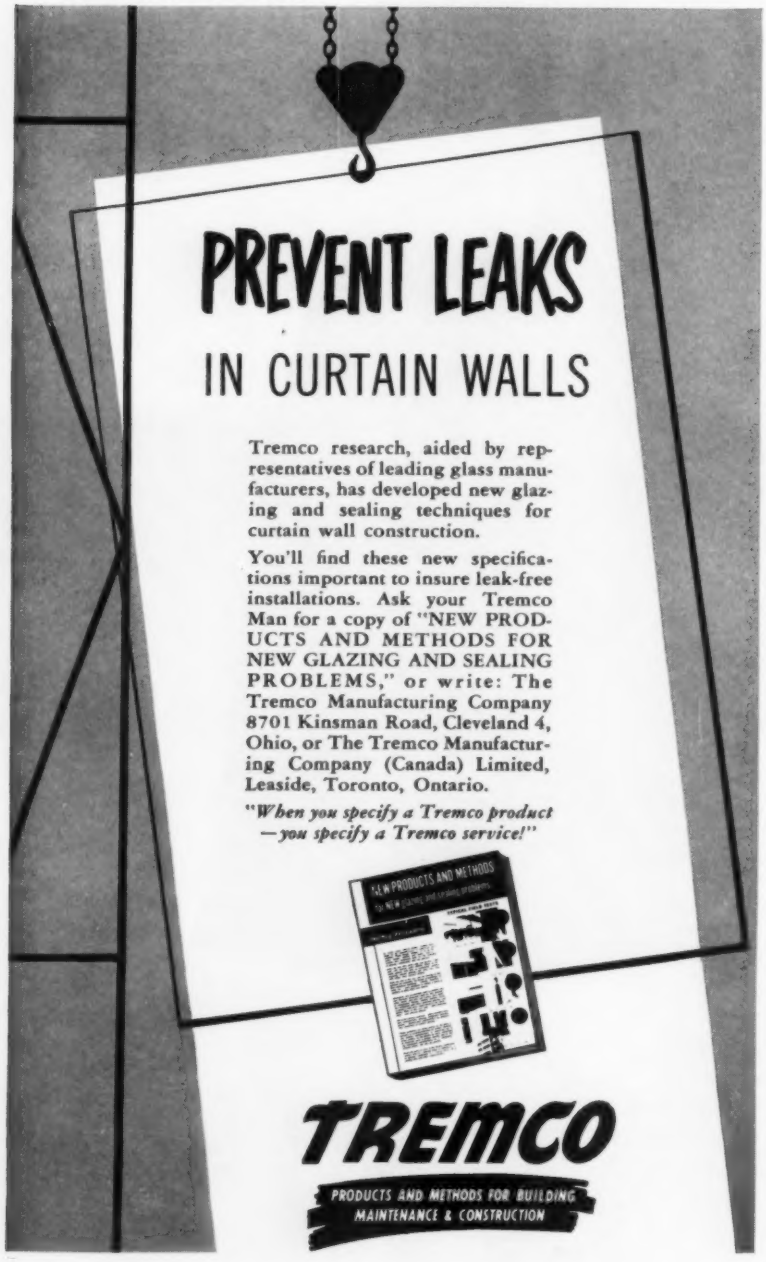
In these fields, which first became eligible for Hill-Burton aid under a 1954 extension of the original Act, only 27 projects are so far under construction in the program; but Dr. John Cronin, Chief of the Division of Hospital and Medical Facilities of the U. S. Public Health Service, which administers the Act, has said he expects very many more to be under way by June.

The health message also renewed the President's request of last year for an FHA-type loan insurance program to aid in the construction of health facilities not eligible for Hill-Burton aid. Under this proposal, the Federal government would provide mortgage insurance (in return for premiums) for loans made by private lenders to project sponsors. All but state and local governments (the Hill-Burton eligibles) would be eligible for such loans, and the money could be used for new construction and equipment, for expansion or modernization of existing buildings. The plan calls for a maximum "contingent liability" of $200 million with another $100 million to be available if the President decided it was in the public interest. For the first year, an authorization of $10 million is requested.

$2.5 BILLION SCHOOL AID ASKED IN FIVE-YEAR PUSH

The fate of the Administration's new Federal-aid-to-education program could not be predicted last month, but the segregation issue was already thoroughly embroiled in the Congressional debate. Demands of Negro, labor and other Northern liberals for an anti-segrega-

(*Continued on page 362*)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ARCHITECTURAL RECORD

WESTERN SECTION

Western Editor:
ELISABETH KENDALL THOMPSON 2877 Shasta Rd., Berkeley 8, Calif.

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WANTED: A NEW DEFINITION OF ARCHITECTURE

Casper Hegner, a member of the Denver architectural firm of Smith & Hegner, is the retiring president of the Colorado chapter, A.I.A. Recent legislative action in regard to the Colorado State Practice Act made plain the importance of a clear, concise and legal definition of the practice of architecture, and suggested to Mr. Hegner a review of all the definitions used in practice acts throughout the country.

As an incentive to wider interest in and effort toward obtaining a new definition of architectural practice for use in state legislation, Mr. Hegner suggests the definition presented here.

Comments and discussion of this vital topic are invited for inclusion on this page.

A DEFINITION of the practice of architecture is central to the purpose of all our state licensing laws. Yet no two state laws are precisely the same in this respect although all are related to each other and are, in many ways, alike. Interesting as is the relationship between definitions, the differences are of even greater interest, reflecting as they do the influence of pressures from outside the profession which have been exerted in individual cases upon the various legislatures.

Since the practice of architecture is described and in a measure defined in every contract made between architect and client, it is surprising to find that the legal definitions under which we practice are either imprecise or incomplete. Whether broad and general, or extremely detailed, they fail on the whole to set forth the great and distinguishing characteristics of architectural practice: the overall concept of the design by the architect and his contractual assumption of responsibility for the service he renders by coordinating the work of his many assistants and consultants and of the building trades which are necessary to the realization of the building project.

In formulating a complete and serviceable definition these differences are significant. What should a legal definition of the practice of architecture include? Some states incorporate "for a fee" in the definition; others specify "to others" as a distinguishing characteristic of the offering of architectural service. Some include "appurtenances" and equipment of buildings in the field of the architects service, others add the giving of advice or consultation on planning to the general administration and responsible direction of the work. The architect is defined separately in several practice laws, evidently because these states believe that to say what he is fails to describe what he does.

The basis for the service to be rendered sometimes includes "knowledge of the principles of mathematics, aesthetics and the physical sciences" — a controversial point apparently in other states where no mention is made of these principles. Texas' law states that the practice may be carried on either as a profession or a business.

Perhaps the simplest approach to a definition of the practice of architecture is that in the Arkansas law which describes it as "preparing plans, specifications or preliminary data for the erection or alteration of any building." Exceptions to this requirement are set forth thereafter.

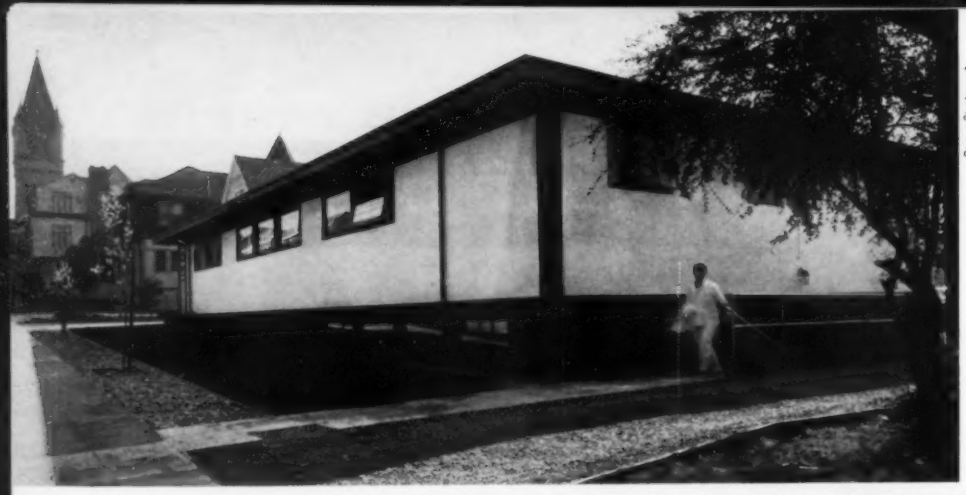
No one of the definitions can be considered complete and perfect, for each includes provisions omitted from the others. In the face of the often dramatic changes in the way in which architectural practice is conducted, and the public's increasing awareness of architecture, an effort to define the practice of architecture should be the concern of all thoughtful architects. If we fail to provide a definition someone else will do it for us.

As a step toward a more precise description of the practice of architecture, here is a suggested definition:

"The practice of architecture is the offering to perform, or the performance of professional services in connection with the design and construction of building projects, their sites and equipment, by means of analysis of the requirements for their use, character and organization, preparation of drawings and contract documents, including specifications and agreements, cost-estimating, coordination of services supplied by others, and supervision of construction to obtain compliance with drawings and specifications."

What do *you* think?

Casper F. Hegner



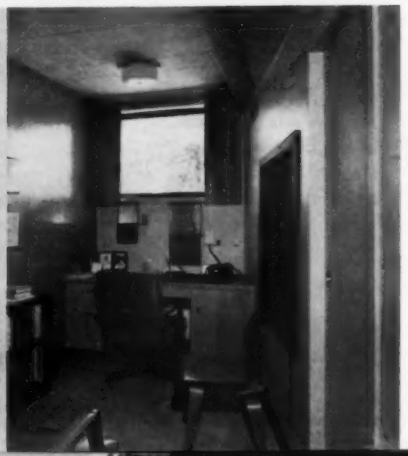
Roger Sturtevant

White stucco walls and green wood trim distinguish this building from its turn-of-century neighbors. Landscaping is purposely simple for easy maintenance

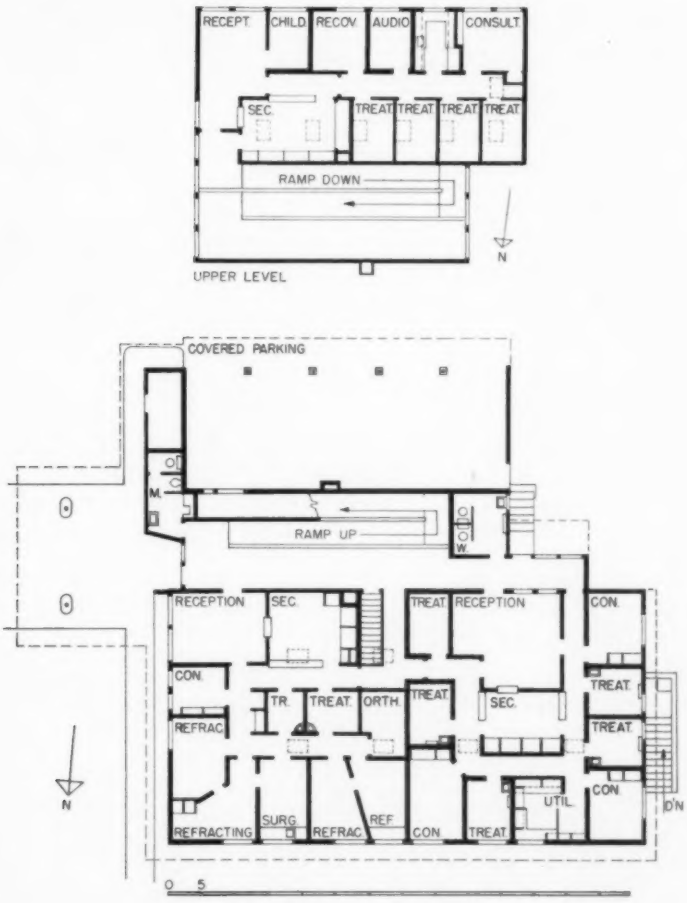
A clear expression of the motor age, building entrance is set back from street under porte-cochere which shelters both in and out driveways

Slope in site makes headroom for parking stalls for doctors' cars under upper floor; patients' cars are parked at rear of lot

From entrance ramp leads up to second floor; first floor suites open off hall



Ophthalmologists' offices and refraction rooms have splayed walls: desk, with mirrors over it, fits in narrow end, patient's chair and instruments are at wide end



THREE-SUITE MEDICAL BUILDING

Berkeley, California

Wurster, Bernadi & Emmons, Architects

Lawrence Halprin, Landscape Architect

SITUATED in a neighborhood whose undistinguished large houses once were single-family residences but now are largely rooming houses for students at the nearby university, this small medical building, providing three suites for medical practice and one rental unit, stands for simplicity and clarity. The two suites on the lower floor are each occupied by three doctors (ophthalmologists and pediatricians); upstairs — reached by a ramp — is a larger suite planned to meet the needs of an eye, ear, nose and throat doctor. The building's structure was designed to make possible addition of another second floor suite. The rental unit, occupied by a branch office of an optical firm, is in the basement where storage also is provided.

The parking area is larger than the building area by 500 ft, but on-site parking in this neighborhood is a necessity because it is a congested residential district with few garages, and students' cars add to the parking problem. Because of the slope of the lot it was possible to locate stalls for doctors' cars under the second floor suite; 14 other spaces are provided along the rear lot line. Entrance to the parking area is through a two-lane driveway sheltered at the building entrance by a porte-cochere.

Construction is wood and steel frame. Exterior walls are finished with stucco painted white; trim is dark green. Interior walls are T & G Douglas fir boards in hall and reception rooms, painted plaster elsewhere.

TWO HANGARS MOVED FROM OLD TO NEW BASE

Official photo, U.S.A.F., Edwards A.F. Base

Jacked up and ready for moving: 1400-ton hangar on dollies at original base

MOVING A HANGAR, even a small one, sounds like too big a job to undertake but the U. S. Army Engineers found that they could save the U. S. Air Force $2,000,000 by moving a huge hangar at Edwards Air Force Base to a new site instead of duplicating the building at the relocated base two miles away. Either a move or a rebuilding project was necessary because Edwards Air Force Base had outgrown its original site, so a new site, big enough for present needs and with room for expansion, was selected. Most of the World War II buildings were temporary structures, but the two hangars — each four stories high and 1400 tons in weight — were permanent construction. These hangars, the Corps of Engineers found, could not be duplicated today for the $3,100,000 they cost in 1944, so the move was a logical solution to providing hangars of this kind at the new site.

Although the job of moving the hangars was the biggest undertaken in western house moving operations, it went through without complication. It took 5 weeks to move the first hangar, six to move the second. The job involved cutting the hangar — four stories high and as big as a football field — away from an adjoining concrete building as well as jacking it up and running dollies — 44 of them — under it, and then moving it across the desert. Cables of extra strength, strung from one side of the hangar to the other, were used to keep the building from spreading.

There were a few ticklish moments in the move. A right angle turn had to be negotiated about a quarter of the way to the new site. To make the turn the building had to be jacked up and each of the 44 eight-wheeled, rubber-tired

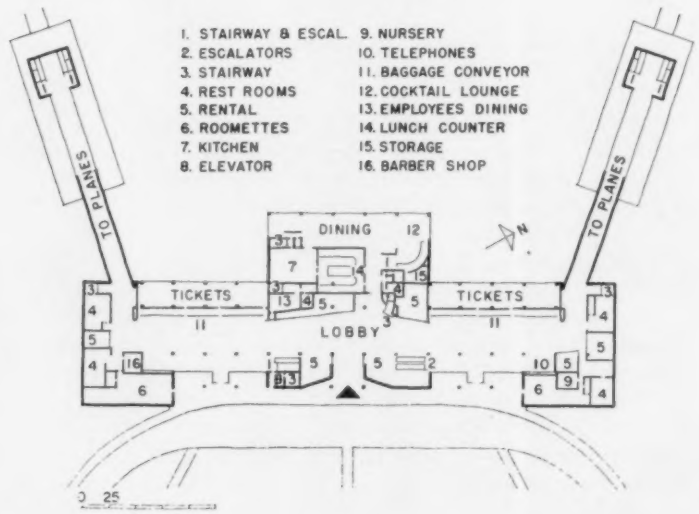
(Continued on page 48-12)

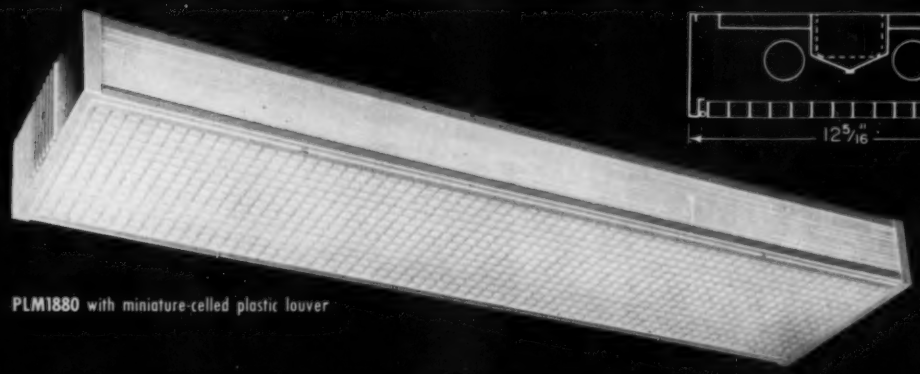
PORTLAND WILL BUILD NEW AIRPORT TERMINAL

PORTLAND'S much-needed new air terminal will be under construction by the end of this spring, according to the present schedule for the $3,400,000 project and should be finished in 1958 in time for the beginning of currently proposed jet liner operations.

Located in the east-central portion of the airport, the terminal will be 500 feet long, three stories high, with a nine-story control tower near its center. Operational activities will be centered on the ground floor; on the second floor will be the passenger concourse, ticket counters, restaurant, concessions, and 19 one-person "roomettes" for use of transfer passengers who want to rest between flights. On the mezzanine a

(Continued on page 48-12)





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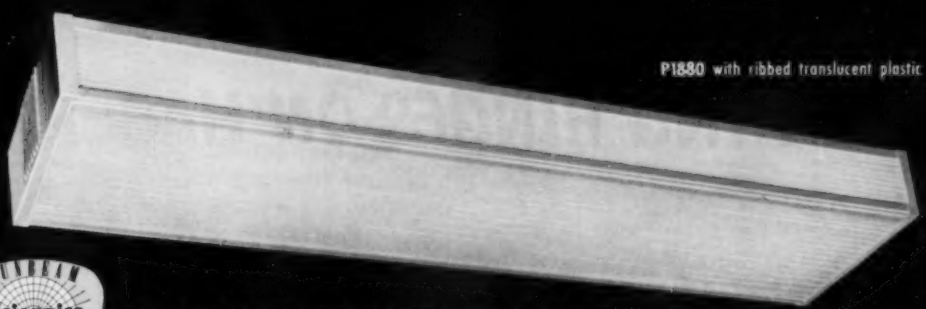
P1880 with ribbed translucent plastic



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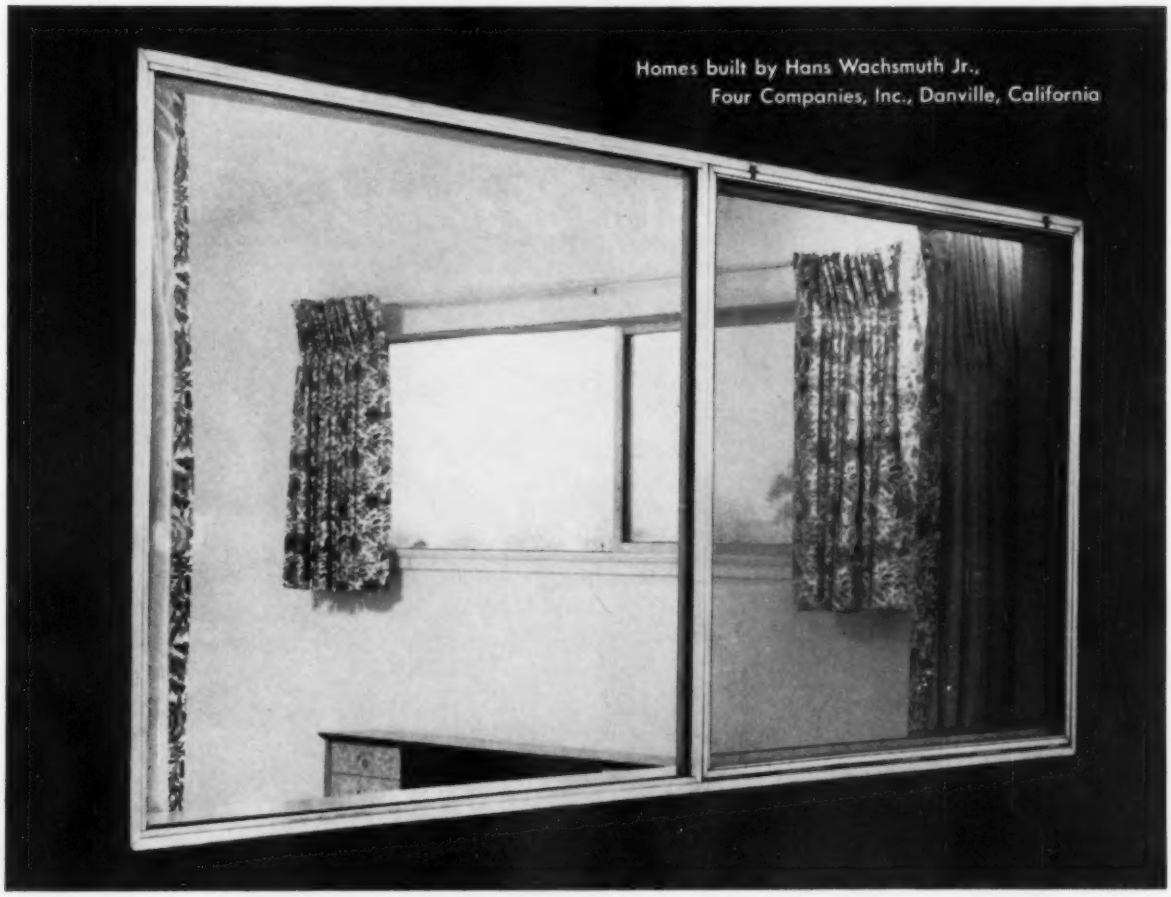

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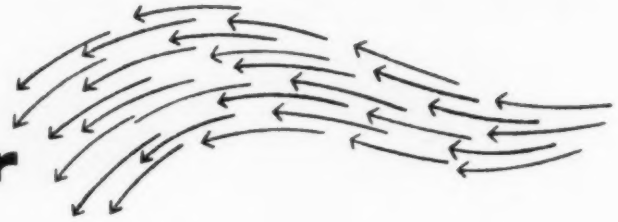

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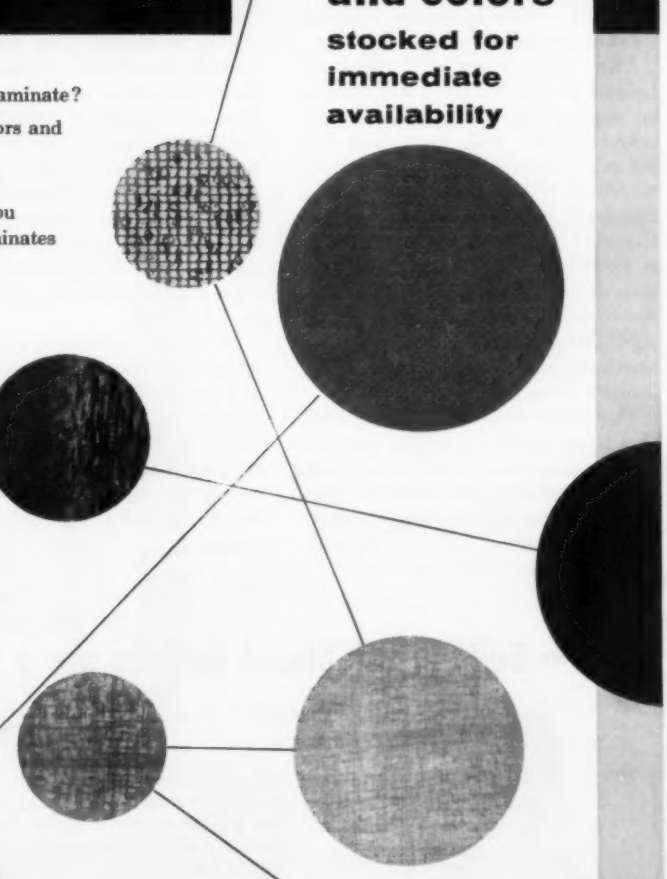

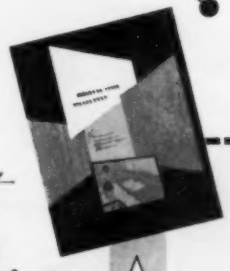

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L.A. URBAN RENEWAL PLAN BLOTS OUT OLD SWINDLE

THE GHOST of a 35-year-old real estate promotion swindle, a square mile of virtually uninhabited land only four miles from Los Angeles Civic Center, will be turned into a residential area under the auspicies of the Community Redevelopment Agency, which plans a $20,000,000 home development for the area to be handled by private subdividers once the land is made usable.

Like San Francisco's Diamond Heights district, the tract, which lies in an area of hills and gullies and was never provided with water, was laid out as a residential subdivision and sold to private builders with no regard for the usability of the land. But it is unlike Diamond Heights in that owners, most of whom apparently bought lots from a map, stopped paying taxes when they discovered the impracticality or impossibility of building, and the city eventually took over the land for delinquent taxes.

The Water and Power Department says it will build a $250,000 reservoir and pumping plant to provide water to the area, and under the California State Redevelopment Act the Redevelopment Agency will prepare plans for the area, acquire land and sell it to subdividers.

When the State Supreme Court ruled last year that Diamond Heights qualified for "redevelopment" even though it had already been developed, the decision made way for action by other California cities where barren areas exist.

SOME PRIVATE POOLS ARE NEIGHBORHOOD BATHTUBS

THE ONLY feasible method of controlling private swimming pool sanitation is through construction regulations and owner education, says Dr. Harry A. Bliss of the U.C.L.A. School of Public Health. Swimming pools have become common adjuncts to houses in areas of moderate climate, particularly southern California and the Southwest, but there is no means of controlling their sanitation as there is for public pools and some, says Dr. Bliss, are like "neighborhood bathtubs."

Many filter systems are inadequate, he reports, and only a few pools maintain an alkaline-acid balance necessary to offset the bacteria-controlling chlorine's irritating effects. Pool servicing companies do a good job, he feels, but owners who service their own pools are not always well informed on necessary measures.

HANGARS MOVED

(Continued from page 48-4)

dollies had to be repositioned. Even then the difficulties were not over; the rest of the way was over unimproved desert land, which meant great care was imperative.

Edwards Air Force Base is commanded by Brigadier General J. S. Holtover. Colonel M. P. Elvin, Installations Engineer at the base, was in immediate charge of the move. Construction operations were monitored by Colonel Edwin M. Eades, Air Force Installations Representative for the South Pacific Region.

PORTLAND AIRPORT

(Continued from page 48-4)

lounge and observation deck will overlook the field. Architects for the building are Burns, Bear, McNeil and Schneider.

The terminal building is part of a $10,000,000 improvement program for the airport. Parking areas, aprons, taxiways, roads, utilities, and a cargo building, as well as a new parallel runway, are included in the overall program.

Built-in telephone outlets are a must in today's homes

says ARTHUR K. EHRLICH, Arthur K. Ehrlich & Associates, Burbank, Calif. Builders, *Better Homes & Gardens* Idea Home for 1955 in Glendale, Calif. (pictured below)

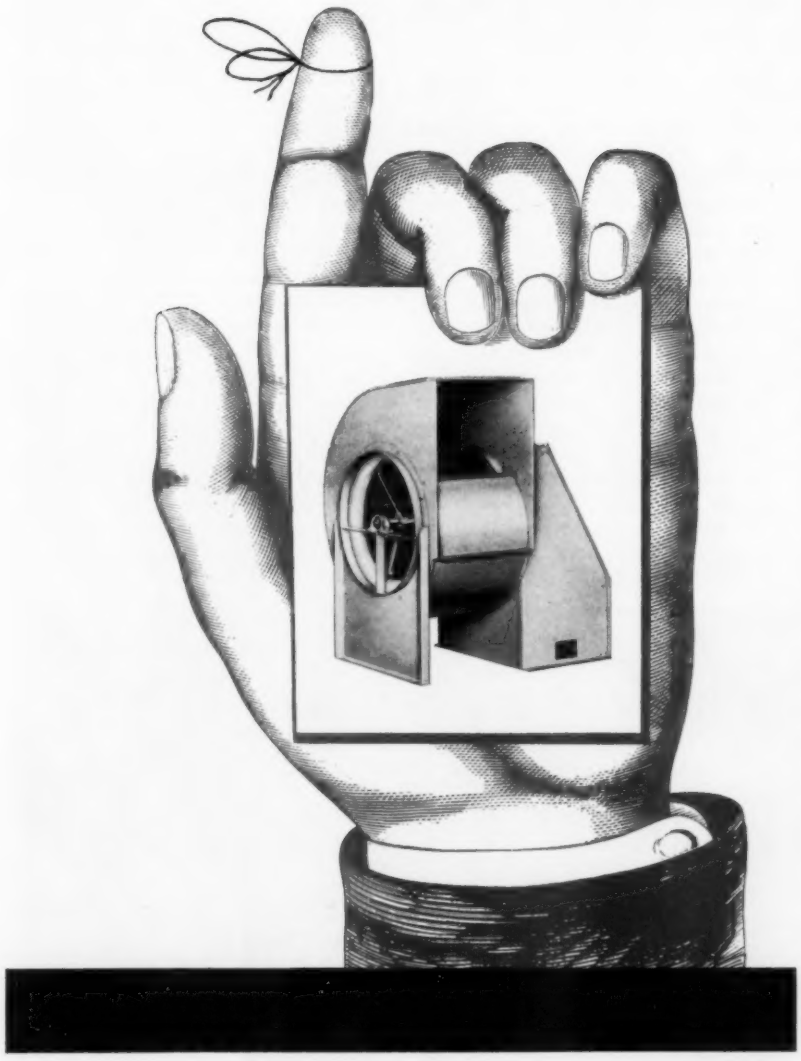
"We wouldn't dream of building a home without concealed wiring and telephone outlets in the original plans. It's the kind of detail that sets the well-built home above the average. It just has to be there." Telephone outlets in rooms that are used most add much to the value of Ehrlich homes.

To successful builders like Mr. Ehrlich, who are setting living standards in the Pacific West, complete telephone planning is as basic as adequate electrical wiring. We are always ready to help you plan built-in telephone facilities. Just call us and ask for our *free* Architects and Builders Service.

Specify built-in telephone facilities —a sign of good planning

Pacific Telephone

we remembered the forgotten fan



High on a windy roof, "the forgotten fan" takes a year-round heavyweight beating from wind and the weather . . . frequently breaks down due to lubrication neglect. In times gone by, expensive repair or replacement was the only answer.

That was yesterday. Today, Utility has available a full series of sensibly engineered Enclosed Drive Blowers designed for outdoor service. All motors and drives are completely enclosed to seal them forever against dirt and moisture, protect them forever against drastic temperature changes. Lubricated for life with pre-greased, permanently sealed ball bearings, costly breakdowns from lack of proper maintenance just don't happen!

Next project, why not specify a Utility Enclosed Drive Blower for roof installation tailored to the job? They cost no more and save expensive and cumbersome sheet metal work. You'll find that however tough "topside" the going gets, Utility blowers can take it — day in, day out — year after faithful year.

A DIVISION OF UTILITY APPLIANCE CORP.

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UTILITY

Manufacturers of heavy and standard duty blowers for heating, air conditioning and ventilating installations. Producers of blowers and blower parts for original equipment manufacturers. Write for catalogue data.

PLANNERS SEE L.A. WORLD'S LARGEST CITY

PUBLIC INDIFFERENCE and lack of facts for understanding the picture of civic growth and development are the greatest problems facing city planners, according to representatives of civic, professional planning and faculty groups who recently met at the University of Southern California, Los Angeles, to discuss the future of that region.

The group predicted that within 20 years Los Angeles will be the largest city in the world, with a metropolitan population of 8,000,000, and stressed the fact that realistic planning on a large scale should be undertaken to prepare for this growth.

Dean Arthur B. Gallion of the U.S.C. School of Architecture led a discussion of zoning problems and land use, with faculty members, civic leaders and city planning personnel from various parts of the Los Angeles area participating in the one-day session.

Among other participants in the discussion program aside from Dean Gallion were Simon Eisner, Gordon Whitnal, Milton Breivogel and Frank Sherwood, faculty members at the school; William Clare, Community Redevelopment Agency; John Roberts, acting planning director, Los Angeles; and Samuel E. Lunden, architect.

CONSTRUCTION STARTS ON AIR FORCE ACADEMY IN FALL

WITH PRELIMINARY road-building and utilities layout already under way, actual work on the building of the new Air Force Academy near Colorado Springs is expected to begin some time this fall, according to Col. Albert E. Stoltz, director of the Academy construction agency.

In the intervening months bids for preliminary work will be let, with electrical and communications system bids scheduled for April, contracts for bridges, sewers, gas and heating mains for May, and for sewage treatment plant in June. Full-scale mockups of two cadet quarters rooms are already under construction, and the actual construction of buildings in the quarters and academic area will begin following clearing and grading of the area, the contract for which is scheduled to be awarded this month. The contract for clearing the area will also include laying of foundations and retaining walls.

First actual buildings to be constructed will be a service and supply area near railroad lines which will include warehouses, storage buildings, automotive repair shops and air installations offices.

S.F. BAY SCALE MODEL TO BE READY THIS FALL

THE SCALE MODEL of San Francisco Bay now under construction by the U. S. Army Corps of Engineers will be completed and in operation by this fall, the Army said recently. The model, now being built in Sausalito, Calif., just north of the Golden Gate Bridge, will cost about $500,000 and is just a part of the $2,500,000 study of the Bay which was authorized by Congress in 1950. The model covers an acre of ground.

With the model the flow of tides and rivers in the Bay can be regulated and precise measurements can be taken of the model's reactions, thus rendering valuable aid in the study of effects on the Bay of such proposed projects as earthen barriers, causeways, tidelands reclamation, irrigation and control of water pollution and salinity. The whole Bay system will be studied over a period of years as to federal interests, flood control, navigation and national defense.

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LIVING LIGHTING

Now it can be told! Berkeley Square was introduced by PEERLESS months ago. Since then, it has excited architects and engineers everywhere. No other enclosed on-ceiling incandescent fixture enjoys the popularity and endorsement of Berkeley Square—proved by actual sales! What's more, despite the incomparable design and quality, the cost is surprisingly low.

ideal for new and existing interiors

The instant you take a Berkeley Square unit from its safety-plus shipping carton, you realize how special a fixture it is! This shallow unit is truly the all-purpose fixture for corridors, stores, public rest-rooms, kitchens, bathrooms, and outdoors. And it can be mounted on any ceiling in seconds.

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12" square with one each, 100 & 75 watt lamps.

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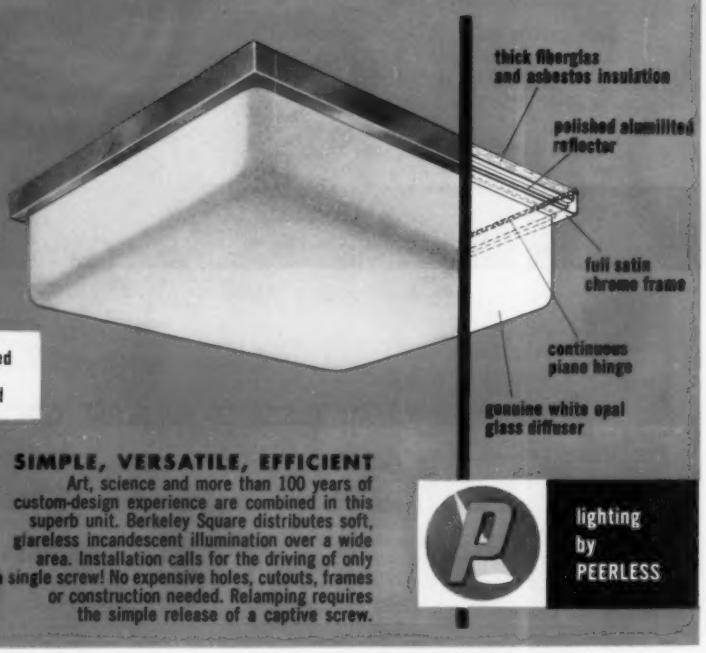
BERKELEY SQUARE

A SHALLOW, SURFACE-MOUNTED INCANDESCENT DIFFUSER


thick fiberglas and asbestos insulation
polished alumilited reflector
full satin chrome frame
continuous piano hinge
genuine white opal glass diffuser

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SIMPLE, VERSATILE, EFFICIENT

Art, science and more than 100 years of custom-design experience are combined in this superb unit. Berkeley Square distributes soft, glareless incandescent illumination over a wide area. Installation calls for the driving of only a single screw! No expensive holes, cutouts, frames or construction needed. Relamping requires the simple release of a captive screw.

lighting by PEERLESS

New Low Cost Folding Door

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Made of Hi-impact Plastic Panels in Beautiful Colors!

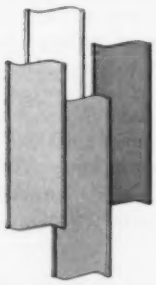
Add sales impact for budget homes. Here now is an innovation in folding doors that helps you answer today's demand for functional design and roomier convenience in *any* price home. It's another Curtition model with quality that surpasses anything else on the market for the money.

Plastic creates strong appeal. With Curtition Decorfold you offer a door that's acid resistant, scuff proof... virtually damage proof... and easy to keep sparkling clean.

For standard openings and wardrobes. Curtition Decorfold opens with the *most compact stacking* of any folding door. Saves space in close quarters... provides *full access* to wardrobes and closets. Saves you money over sliding doors... with faster, simpler installations.

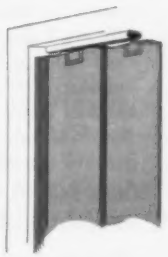
Doors are completely assembled with Nylon clip-glides and pull handles for both sides. Packaged with track, screws and friction catch — ready for installation. Sizes to fit openings up to 10′ in width.

Retail as low as $21.50 for 2′0″ x 6′8″ door



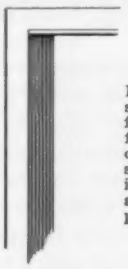
Fits new decorating trend

Curtition Decorfold's rich plastic surface provides a pleasing blend or contrast to soft fabrics, carpets, masonry and wood furnishings. Choice of soft colors; to fit any decorative scheme.



Simplified trouble-free design

No wobble or chatter because of newly engineered one piece nylon clip-glides. No moving parts to jam up or come loose, no warping. Decorfold is center-line suspended in a steel track. Finger touch to open or close.



A 24″ door folds back to only 2″

Decorfold's compact stacking is unique in folding doors — 1″ for every 12″ of door. The slim line stack provides maximum clear opening and a rich, subtle pillar effect.

Learn the 15 new points of superiority in the

CURTITION ROYALFOLD

The King of Accordion Doors . . . also Manufactured by

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Thompson's new waterproofing Redwood Stain . . .

gives your woodwork permanent redwood beauty with built-in water and weather protection. This entirely new compound contains pigments that enrich wood and retard fading . . . **plus** the properties of Thompson's deep-penetrating Water Seal that locks out destructive moisture. And you can achieve a variety of different tone effects by diluting Thompson's Redwood Stain with paint thinner or by adding red oxide in tube form.

It's Concentrated For Economy

One gallon of TRS covers up to 400 square feet or more . . . costs you as little as 1c a sq. foot to apply.

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WASTE SPACE

Smile and the World Smiles with You

ALL PRODUCTS should smile," says Walter Landor, San Francisco industrial designer. "If a package has an outgoing personality — if it smiles at the customer, reassures her that it is worth the money and, if it is a food product, activates her taste buds — more people will choose it than another package which does not smile." Furthermore, says Landor, anything can be made attractive — even dead fish.

There's a moral there. What do *you* think?

Money's not Everything, But It Helps

ALL THINGS CONSIDERED, a civil engineer needs about $10,000 before starting his practice, said George Nolte, Palo Alto, Calif., civil engineer, at a recent panel discussion on the problems of a consulting engineering practice. By "all things" he meant not only the stamina to stick it out till the first job materializes, but the costs of surveying equipment and cash to pay surveying crews when the job comes. Structural engineers and architects can take heart: Mr. Nolte said that "other fields seem to take less capital". The panel agreed that the best way to get engineering work is by giving better service and not by lowering fees. And that goes for architecture, too: better service at fair, non-competitive fees, and clear explanations as to what service the fee is for. Let the competition be on quality of service, not on lowness of fee.

Not All Wet

HAVE MISPLACED my magazine subscription record. Please let me know date of expiration of my subscription to ARCHITECTURAL RECORD. Address me temporarily (due to flood) at 204 C Apt. 2, Yuba City, Calif. Will appreciate immediate reply. Yours truly, B. T. Berndtson, C. E."

It's humbling to know that not even so disastrous a flood as that on Christmas Day which made 6500 *families* homeless in Yuba City can dampen a subscriber's interest in getting his copy of ARCHITECTURAL RECORD.

Toward a Regional Architecture

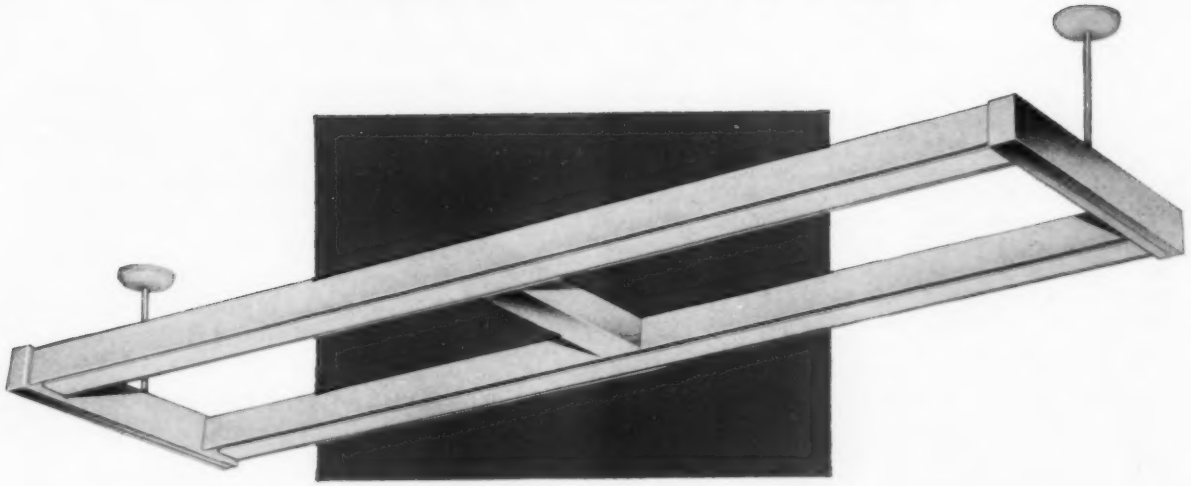
IT IS ALMOST IMPOSSIBLE to name an architecture which ignores the sun, except possibly the Eskimo igloo, and that does so because of the absence of sun, to put it mildly," said Minoru Yamasaki at last fall's Northwest Regional A.I.A. Conference at Glacier Park. Last month I learned through a building report that the Department of the Air Force has been building igloos (for storage) in — of all places for an architecture that ignores the sun — Arizona! Yama's point was that sun and shadow could add delight to our buildings. The Air Force's point is strictly materiel-istic — utilitarian quartermasters don't stock regional architecture and delight.

Fashion Note for Specs Writers

A SHOESTORE in Denver has used a piece of uranium as the cornerstone of its new building, feeling this to be appropriate since "Denver is the capital of the uranium country." Although Sweet's is naturally the specs writers' best friend, it looks like a Geiger counter may become his next best. Already quite a few architects in the "uranium states" — Colorado, New Mexico, Arizona, Wyoming, for instance — have their own equipment and do prospecting on weekends; some even have taken out options on likely looking pieces of land. Good luck to them!

— E. K. T.

MORE LIGHT PER DOLLAR



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PERFECT VISION

LUMINAIRE USING NEW 800 MILLIAMPERE LAMPS

Totally new in conception, design, performance. Takes full advantage of the high output of new 800 MA., rapid start lamp. The only indirect luminaire available that *mounts within 12 inches of ceiling without severe light blocking.* Slender lines and open construction passes amazing percentage of upward light back to work surface . . . Gives you *far more light per dollar* than ever thought possible. Louvering effect of fixture subdues ceiling brightness. No pronounced ceiling pattern. Faultless light distribution; its comfort and quality astonishes everyone.

By all means, investigate this exciting new fixture promptly. The more you know about it, the more use you'll find for it. Its possibilities are limitless. Where shall we send your complimentary file of technical data? Kindly mention this publication and our catalog number, PV-288.

Features

- **Upward and downward light balanced for best seeing.**
- **High efficiency.**
- **Brightness meets ASA school lighting standards.**
- **Mounts within 12" of ceiling without blocking return light.**
- **Near perfect visual comfort in any size room.**
- **High adaptation level yet low brightness and brightness ratios.**
- **Economical to install.**
- **Easy to maintain.**
- **Harmonizes well with modern architecture.**
- **Extremely flexible in arrangement.**

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INGLEWOOD CALIFORNIA

ILLUMINATION EQUIPMENT SMOOT-HOLMAN INGLEWOOD, CALIFORNIA MADE IN U.S.A.

We Support the National Lighting Bureau

OUR SERVICE IS LIMITED TO THE WEST AND SOUTHWEST

PROFESSIONAL NEWS

"Home of Month" Award in Seattle

Mithun & Nesland, Seattle architects, won the 1955 award in the Joint Washington State chapter, AIA-Seattle *Times* "Home of Month" competition for the house in Bellevue, Wash., which they designed for Mr. and Mrs. A. O. Strandberg. The competition, held in 1954 and 1955, is for the selection of the best among the 12 houses published in the *Times* during each month of the year.

The winning firm received a cast aluminum bird, symbolizing inspiration, by Everett DuPen, sculptor. The owners of the house received a $500 check from the *Times*. Honorable mentions went to James Chiarelli, John Ridley, and Wortman and Wilkins, all Seattle architects. The winning houses were selected by a jury consisting of two architects, a landscape architect, the head of an architectural engineering school, a stonemason, a builder and an interior decorator.

Houses chosen for monthly presentation in the *Times* are open to visitors on the day of the publication of sketches, plan and description; agreement to show the house is a prerequisite to selection as a "home of the month". The program, which will be repeated again this year under the same joint AIA-*Times* sponsorship, permits the public to visit informally architect-designed houses and so have a chance to experience space organization and the unity between interior and exterior design.

Architect in Public Service

Francis B. Jacobberger, architect, was recently elected chairman of the board of directors of Catholic Charities, Inc., Portland, Oregon.

CALENDAR OF WESTERN EVENTS

• To March 18: The New Decade: 22 European Painters and Sculptors (from Museum of Modern Art, New York City). San Francisco Museum of Art, War Memorial Building, Civic Center.

• April 11–13: South Pacific Coast Region Illuminating Engineering Society, Golden Anniversary regional conference. Mark Hopkins Hotel, San Francisco, Calif.

• April 11–14: American Industrial Development Council 1956 convention, sponsored by San Francisco Bay Area Council and Stanford Research Institute. San Francisco, Calif.

• April 21–29: California International Home and Garden Show, Oakland Exposition Building, Oakland, Calif.

• May 14–18: National A.I.A. Convention: "Architecture for the Good Life." Biltmore Hotel, Los Angeles, Calif.

• June 14–24: Construction Industries Exposition and Home Show. Pan Pacific Auditorium, Los Angeles, Calif.

APOLOGIES: To Denis Beatty, who should have been credited as architect (licensed in California) for the House in Mexico shown in the December Western Section's story on the City of Paris' exhibition showing the relation between architecture and interior decoration.

With dignified, but striking effect, the beauty of **PORCELAIN ENAMEL** blends with companion materials and defies time, weather and wear.

Illustrating its versatility, the Canopy Facia and Bulkheads on the building shown, are of this ever-lasting material.

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WESTERN SECTION

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Catalogs of the firms listed below are available in the 1956 Sweet's Catalog Files as follows:

a — Architectural File (green)
ic — Industrial Construction File (blue)
lc — Light Construction File (yellow)

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a	Curtition Corporation	48–15
a	Fabricon Products	48–11
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	Thompson, E. A. Co., Inc.	48–16
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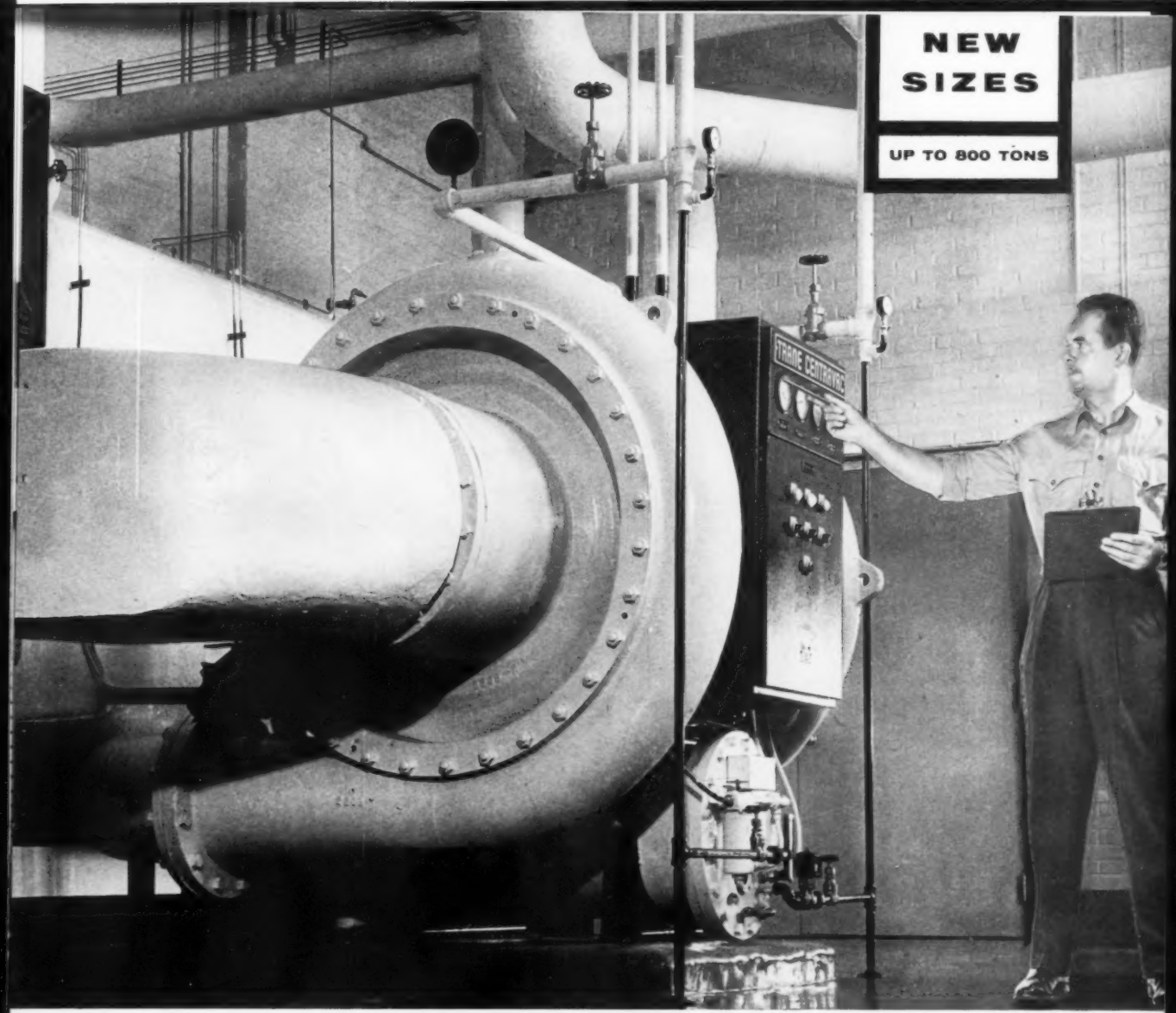
Western advertising offices: LOS ANGELES, Bob Wettstein, 672 S. Lafayette Park Pl.; PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 209 Post St.



Trane CenTraVac, the water chiller you can place anywhere from basement to penthouse—even outdoors!

No matter where your water chilling equipment must be located, here's the way to simplify your problems in design, installation and operation.

You can install the TRANE CenTraVac more easily anywhere from basement to penthouse because it's so compact, quiet and vibration-free. And you can even install it outdoors!

Now, new larger sizes to 800 tons give you *all* advantages found in the TRANE CenTraVac, the industry's first hermetic centrifugal. Just check these convenient CenTraVac features:

Greater freedom of location. No disturbance from noise or vibration.

Flexibility for comfort or process.

Easy installation on any level surface strong enough to support its weight. No field alignment.

Automatic. Automatically adjusts its use of power almost directly to cooling load down to 10% of capacity. No full-time attendant.

Hermetic. No shaft seals, no gear box; only one major moving part.

All are yours in the CenTraVac!

For heating, cooling, ventilating . . .
For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS

COPYRIGHT 1956—THE TRANE COMPANY, LA CROSSE, WIS.
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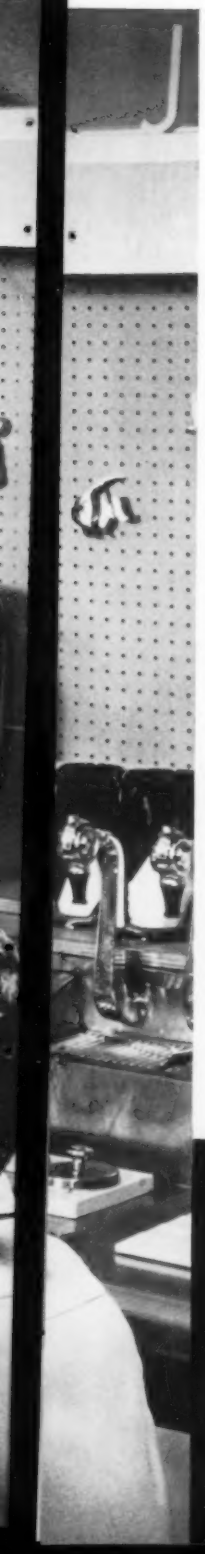
New Trane Air Conditioners take

Trane Accessible Hermetic Compressor

Motor and compressor are completely sealed, yet both are easy to service. Replaceable cylinder liner. Exclusive cadmium-plated valves last up to 800% longer than ordinary steel valves.

Self-Contained up to 27% less space



New beauty with trim new cabinets; new quietness with new "iso-sound" design

Here are "space-misers" for you: the new 3, 5 and 7½ h.p. TRANE Self-Contained Air Conditioners for 1956. They're completely redesigned to pack top efficiency into new, trimmer cabinets—and do their job without making a big noise about it!

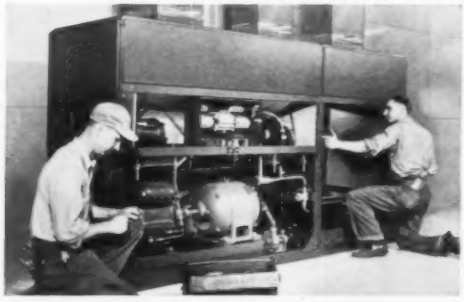
New space-saving—as much as 27% on the 5 and 7½ h.p. models—has been achieved by new twin-fan construction.

New quietness has been attained with "iso-sound" design—fan section and compressor section each *floating independently* on sound and vibration isolators.

New beauty you can see, and your customers will agree!

And full-rated capacities are, as always, guaranteed by rigorous tests in the TRANE Research and Testing Laboratory, "The House of Weather Magic."

With the TRANE Accessible Hermetic Compressor as their heart, these are the complete-in-one-package air conditioners TRANE-engineered, TRANE-built, of components *matched* together to *work* together, to assure complete customer satisfaction. For details, see your TRANE Sales Office or write TRANE, La Crosse, Wis.



"Commercial" Sizes of 10, 15, 20 Tons, Too

Quick and easy to install, these models come with all internal wiring and piping completed. Multi-step capacity control reduces starting and stopping, saves power. Cadmium-coated compressor valves for longer life. Easy to service. Evaporative condensers optional for water savings up to 95%.

For heating, cooling, ventilating . .
For <u>any</u> air condition, turn to

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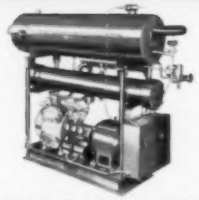
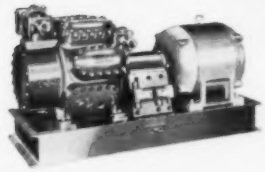
NEW SIZES



TRANE Cold Generators now in 8 new models, including 125 and 150 h.p. sizes. Simple piping and wiring connections make them easy to install.

NEW SIZES

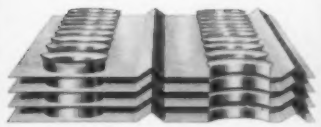
NEW SIZES



Reciprocating Compressors are smooth, direct-drive units. Capacities to 75 tons in single units . . . from 60 to 150 tons in Duplex units.

NEW DESIGN

NEW DESIGN



TRANE Coils have the exclusive Delta-Flo Fin for higher heat efficiency, increased strength, greater ease of cleaning. Mechanically bonded.

New UniTrane models for '56 Air Conditioner Line

provide the most versatile in Trane history!

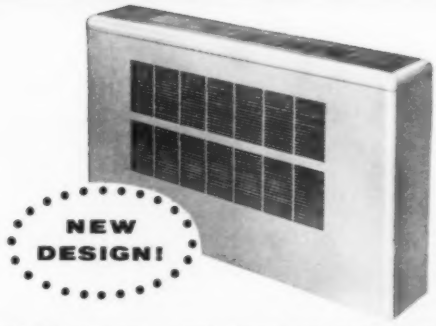
Now! Induction UniTrane units make the Trane line wider than ever!

The famous UniTrane individual room air conditioners for 1956 are slimmer, with new, trim, space-saving design. And they provide individual room control with maximum flexibility and economy of operation. Simple piping and wiring connections—yet they heat or cool, ventilate, dehumidify and filter *all* the air!

Best of all, there's a UniTrane model to fill the most exacting requirements for any multi-story, multi-room application—for new or existing buildings. There are attractive floor models that blend with modern building design; ceiling models for furred-in installations; concealed types for that "built-in" look. And now, for 1956, the line is made more versatile with the addition of the new Induction UniTrane unit with optional filters for installations where it is desired to filter *all* the air. Housed in an attractive cabinet so sturdy it supports a man's weight, this new unit is trim, compact and efficient.

So now, with these Induction units, the regular Fan-Coil UniTrane units, Climate Changers and other TRANE equipment, TRANE brings you *matched* equipment to do any air conditioning job—from small shop to giant skyscraper! In flexibility for design and installation, or for future remodeling, here is the utmost in air conditioning equipment . . . units designed and built together to work together!

Class III Fans now in a wider range of *standard* sizes bring you new freedom of design. Designed especially for high-pressure air conditioning systems.

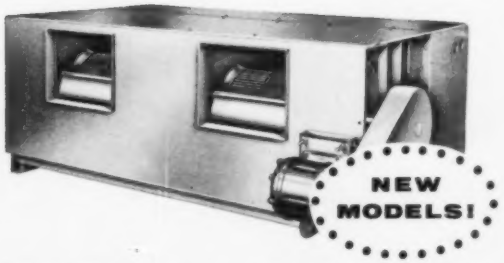


Induction UniTrane air conditioners may be ordered to filter *all* the air—not just the primary air. Individually controlled for personal climate preference or changing needs.

For heating, cooling, ventilating . . .
For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS



TRANE Climate Changers meet a wide variety of air conditioning requirements. Multi-zone models provide different climates for up to 6 zones at the same time. Capacities: Regular models to 29,000 cfm; Multi-zone models to 23,400 cfm.

For skyscrapers, schools or corner stores, houses, apartments or industrial plants . . .

One source . . . your heating

Trane Convectors for quick, clean, comfortable heat

These famous TRANE Convectors will provide the answer for many difficult heating problems—in offices, residences, laboratories, stair wells and corridors. Easy to install, they are available in a wide variety of models for free-standing, recessed or wall-hung applications. Eleven cabinet styles with flat or sloping tops give you flexibility of design. And TRANE Convectors come preassembled for fast, easy installation.

The famous TRANE fin-and-tube extended surface coil serves as the heating element on all TRANE Convectors. Cabinets feature sturdy construction with rounded corners, overlapped cabinet joints, and integral Free-Flo Grilles.

TRANE Wall-Fin brings draft-free heating to long wall and window areas. Can be used singly or in tiers as a low cost means of space heating or supplemental heating at points of high heat loss. Sloping top cabinets or grilles.

TRANE Force-Flo Heaters provide a blanket of heat for doors and entryways in restaurants, shops, showrooms and public places. Compact units, ideal for hard to heat places.

TRANE Baseboard Convectors heat where the cold begins—along outer walls, under windows. 50% faster installation—because cabinet and coil are preassembled. Efficient heat transfer assured by TRANE Extended Surface Coil, adapted to baseboard use.

One responsibility for all and ventilating needs!

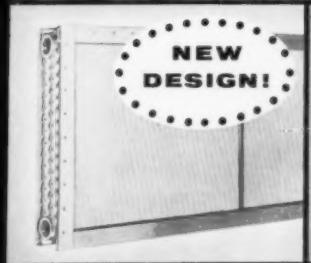
Trane Torridors for comfort or process heating and ventilating

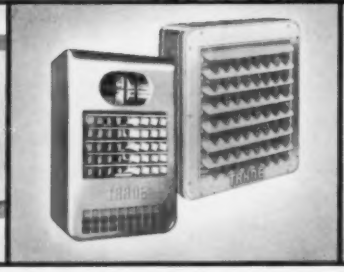
Here's a flexible, large capacity, heavy duty blower-type unit that may be used with or without ducts to deliver up to 1½ million Btu's. For space heating and ventilating, this TRANE Torridor with its powerful centrifugal fans distributes filtered, warmed air over large areas. And it can deliver air through ducts to smaller rooms, or hold accurate temperatures for process applications. Ideal for warehouses, shipping docks, garages—anywhere you need a reliable supply of tempered air for heating, ventilating. Many casing styles, damper arrangements to provide the features you need.

For heating, cooling, ventilating . . .
For <u>any</u> air condition, turn to

TRANE

MANUFACTURING ENGINEERS





TRANE Heating Coils provide instant heat response. Aluminum-copper construction with exclusive Delta-Flo Fin and mechanical bond.

Horizontal and Gas-Fired Unit Heaters put the heat where you want it. Only TRANE Heaters have the exclusive, patented Louver Fin Diffusers that direct air stream in any number of patterns.

Projection Unit Heaters are vertical discharge units with patented TRANE Louver Cone Diffusers. Can direct heat in different directions, different proportions at the same time!

TRANE Steam Specialties save fuel, stop waste, protect equipment. Complete line of valves, traps, strainers, vents for heating or process applications.

Trane Unit Ventilator with Kinetic Barrier Action stops drafts all day long!

This smoke test shows how the TRANE Unit Ventilator is helping solve the ventilating problem in modern schools . . . helping to maintain even temperatures and eliminate drafts—in every corner of the room.

The TRANE Unit Ventilator, with *Kinetic Barrier* action, forces air upward under *constant* pressure. Stops chilling downdrafts *all day long.* Rising not just at one point, but blanketing the entire wall, this tempered air blends with room air to keep the air in every part of the classroom fresh and comfortable.

Whisper-quiet in operation, the TRANE Unit Ventilators have decorator styling that adds to the beauty of any room. Baked-on finish is extremely resistant to scuffs, bumps and kicks . . . stays *new-looking* longer!

For heating, cooling, ventilating . . .
For <u>any</u> air condition, turn to

TRANE

MANUFACTURING ENGINEERS

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* UNCONDITIONALLY GUARANTEED

Write for Literature

TODAY'S OUTSTANDING HOLLOW FLUSH DOOR

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TODAY'S STRONGEST GUARANTEE

*

We hereby **GUARANTEE** MORGAN TEE-COR doors **UNCONDITIONALLY** against all defects in material and workmanship.

We agree to replace without charge any MORGAN TEE-COR door that proves defective — including the cost of hanging and/or finishing if the replacement occurs after a door has been installed and/or finished.

MORGAN *Company*

TEE-COR DIVISION

MORGAN *Company* · **Oshkosh, Wisconsin**

THE RECORD REPORTS: CONSTRUCTION COST INDEXES

Labor and Materials — **U. S. average 1926–1929 = 100**

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
1952	278.2	274.8	271.9	274.9	271.8
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
Oct. 1955	298.4	291.0	306.1	314.4	309.1
Nov. 1955	298.6	291.2	306.4	314.6	309.3
Dec. 1955	299.1	291.7	307.9	316.3	311.3
	% increase over 1939				
Dec. 1955	142.2	138.3	135.6	137.1	139.3

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.3	224.6	221.3	221.8	223.0
1954	219.6	219.1	223.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
Oct. 1955	229.6	229.0	233.3	235.7	236.1
Nov. 1955	229.8	229.2	233.6	235.9	236.3
Dec. 1955	230.8	230.1	235.3	238.2	237.2
	% increase over 1939				
Dec. 1955	167.4	176.9	147.4	144.6	150.5

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.6	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
Oct. 1955	276.8	269.6	276.0	284.2	281.0
Nov. 1955	277.1	269.9	276.3	284.3	281.3
Dec. 1955	278.3	270.8	278.1	286.9	282.5
	% increase over 1939				
Dec. 1955	152.5	153.1	134.3	139.5	137.4

SAN FRANCISCO

1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.6	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.6	275.0	284.4	279.6
Oct. 1955	271.9	263.5	280.0	288.9	285.5
Nov. 1955	272.3	263.9	280.5	289.3	285.9
Dec. 1955	272.7	264.3	281.0	289.7	286.3
	% increase over 1939				
Dec. 1955	158.2	166.2	139.4	137.7	145.8

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

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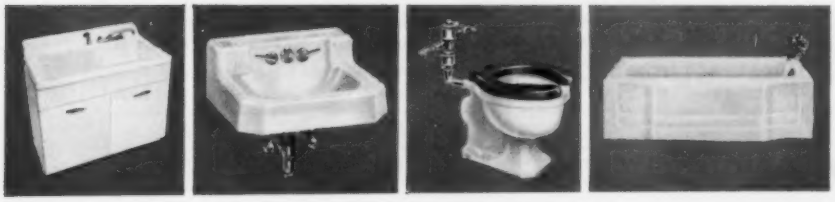

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RADIATOR COMPANY
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DOW

NOW! STYROFOAM

brings entirely new type of perimeter insulation to homes!

No other material like it! An expanded plastic, its remarkable insulating properties provide lifetime protection against cold

Styrofoam® (a Dow plastic foam) is the same insulation that's proved so outstandingly effective in industrial refrigeration work. Field tests and actual use by building contractors and architects prove it's just as permanently effective, just as economical in perimeter application!

Look at these outstanding advantages!

HEAT WON'T READILY PENETRATE IT . . . Styrofoam has a low "K" factor (0.25). And it stays low indefinitely.

DOESN'T ABSORB WATER . . . Because it has a non-interconnecting cellular structure. Here's the secret of its constantly low "K" factor. No exterior coatings needed, either.

RESISTS ROT, MOLD, VERMIN, DETERIORATION . . . Styrofoam has no food value so it's vermin and fungus resistant . . . won't rot, either. It lasts and lasts.

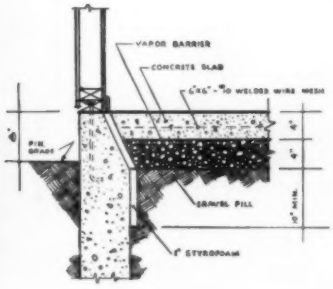
LIGHTEST RIGID INSULATION EVER MADE . . . Has an average density of 1.8 lbs. per cubic foot . . . can be installed in large pieces, cutting labor costs.

HIGH COMPRESSIVE STRENGTH . . . Average strength of 3,000 lbs. per square foot. Concrete floors can be poured right over it.

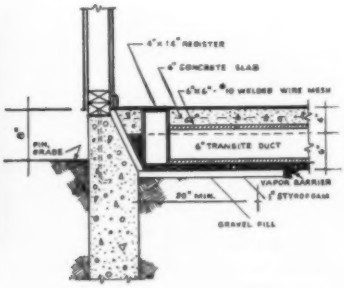
EASY TO HANDLE . . . It's light, clean . . . can be cut and shaped with ordinary tools . . . easily bonded to itself and other materials.

ECONOMICAL . . . Its ease of handling cuts time and installation costs. Its constantly low insulation value brings lower fuel bills.

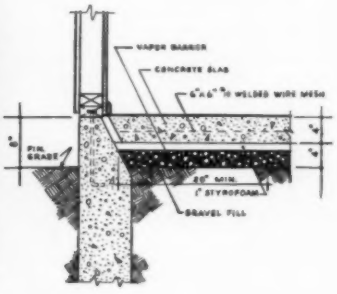
Here's how Styrofoam is used in perimeter applications



Styrofoam is being used in a vertical position for perimeter insulation. It can be adhered in place or held by back fill. Minimum F.H.A. requirements in vertical position are one to two inches thick from floor line to a depth of 12″-24″ below grade line depending on climatic conditions.



In this perimeter heating application, Styrofoam is used both vertically above grade and horizontally from outer edge of slab on the grade. One inch thick Styrofoam perimeter insulation in a 1′-1½′ combined vertical and horizontal width is accepted by F.H.A. for perimeter, radial and radiant type slab heating systems.



Styrofoam used in a horizontal position for perimeter insulation. One to two inches of Styrofoam is used for a distance of 12″-24″ in from perimeter, meeting F.H.A. minimum requirements in various climatic areas. Due to the strength and moisture resistance of Styrofoam, the concrete floor can be poured directly over it without compressing the Styrofoam.

For further information on Styrofoam send in the coupon below or contact your nearest distributor of Styrofoam.

THE DOW CHEMICAL COMPANY, Midland, Michigan. *The Putnam Organization, Inc., Chicago, Ill. • Seward-Kauffman Corp., Elkhart, Ind. • Styro Products, Inc., Kansas City, Kansas • Atlantic Foam Products Co., Ipswich, Mass. • Par-Foam, Inc., Detroit, Michigan • Edwards Sales Corp., Minneapolis, Minn. • Floral Foam Products, Midland, Michigan • Styro Sales Co., New York City • William Summerhays Sons Corp., Rochester, N.Y. • G. & W. H. Corson, Inc., Plymouth Meeting, Penn. • The Emerson Co., Houston, Texas • Utah Lumber Co., Salt Lake City, Utah • S & S Sales Corp., Milwaukee, Wis. • Durofoam Insulation, Ltd., Kitchener, Ontario, Canada • Western Foam Products, Inc., Colma, Calif. • Wiley-Bayley and Co., Seattle, Wash.*

Please send me further information on Styrofoam for use in perimeter applications.

THE DOW CHEMICAL COMPANY
PLASTICS SALES DEPARTMENT PL526V
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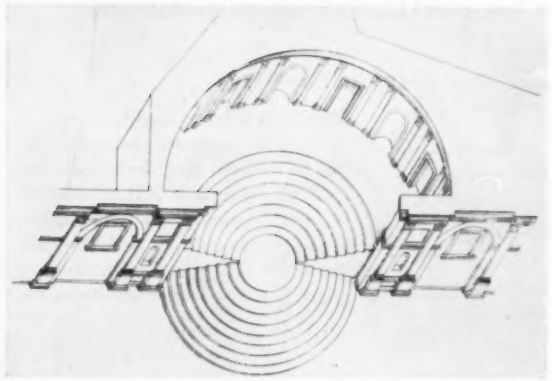


3.

Bramante's Great Space

The Cortile Del Belvedere (Studi e Documenti per la Storia del Palazzo Apostolico Vaticano, III). By James S. Ackerman. (Vatican City) 1954. 259 pp, illus. $27.00. (*U. S. distributor — G. Wittenborn & Co., 38 E. 57th St., New York*)

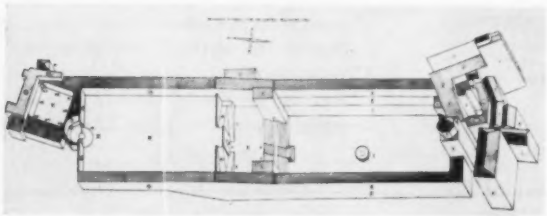
BY VINCENT J. SCULLY

THIS WORK BY ONE OF AMERICA'S most distinguished young architectural historians is the third in a series published by the Vatican Library and dedicated to the history of the Vatican buildings. The earlier volumes by other scholars treated the topography of the site and the history of the Vatican Palace in Antiquity and the Middle Ages. The present volume is concerned with the most important period of all, that between 1504 and 1585, and with the historically most important domestic project ever undertaken for the Vatican, the Court of the Belvedere, designed by Bramante for Julius II.

The author's task, as he points out, was primarily an archaeological one, since Bramante's scheme for the court has been largely buried under later buildings. Because these, unlike earth, could not be removed to reveal the original complex, the author was forced to reconstruct Bramante's project through the use of sixteenth-century drawings. He has turned this requirement into an outstanding achievement. Years of patient research have turned up not only most of the drawings in European collections which can be made to bear upon the problem (Fig. 1) but also a staggering number of relevant and hitherto unpublished documents from the Vatican and other archives. The result is a careful, totally con-

(Continued on page 66)

2.



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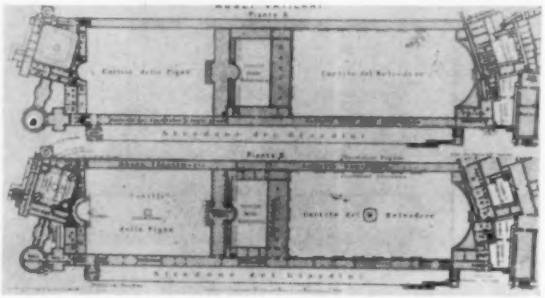

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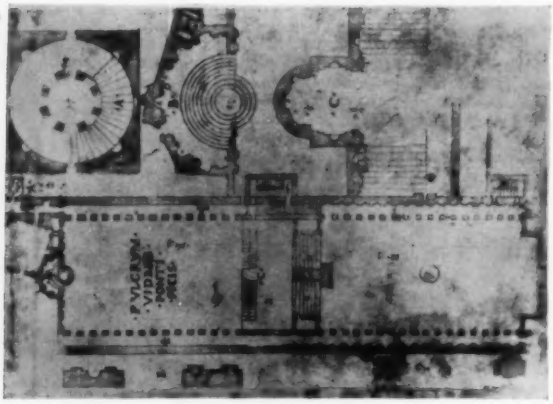

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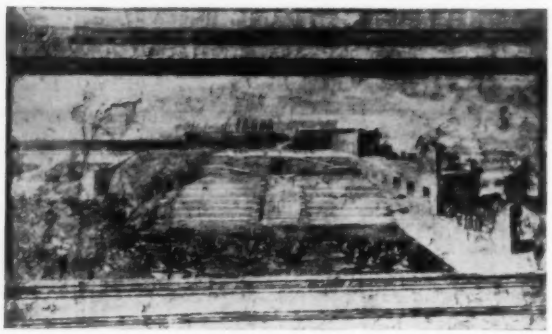
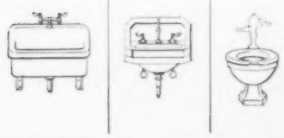


As you consider the needs of the nation's hospitals



Available in cast iron, formed steel, and vitreous china, through quality-controlled manufacture. See your Eljer representative or write: Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh 22, Pennsylvania.

—look to Eljer for a complete selection of plumbing fixtures and brass goods especially designed for hospital installations. Matchless styling and proved utility are better served by Eljer.

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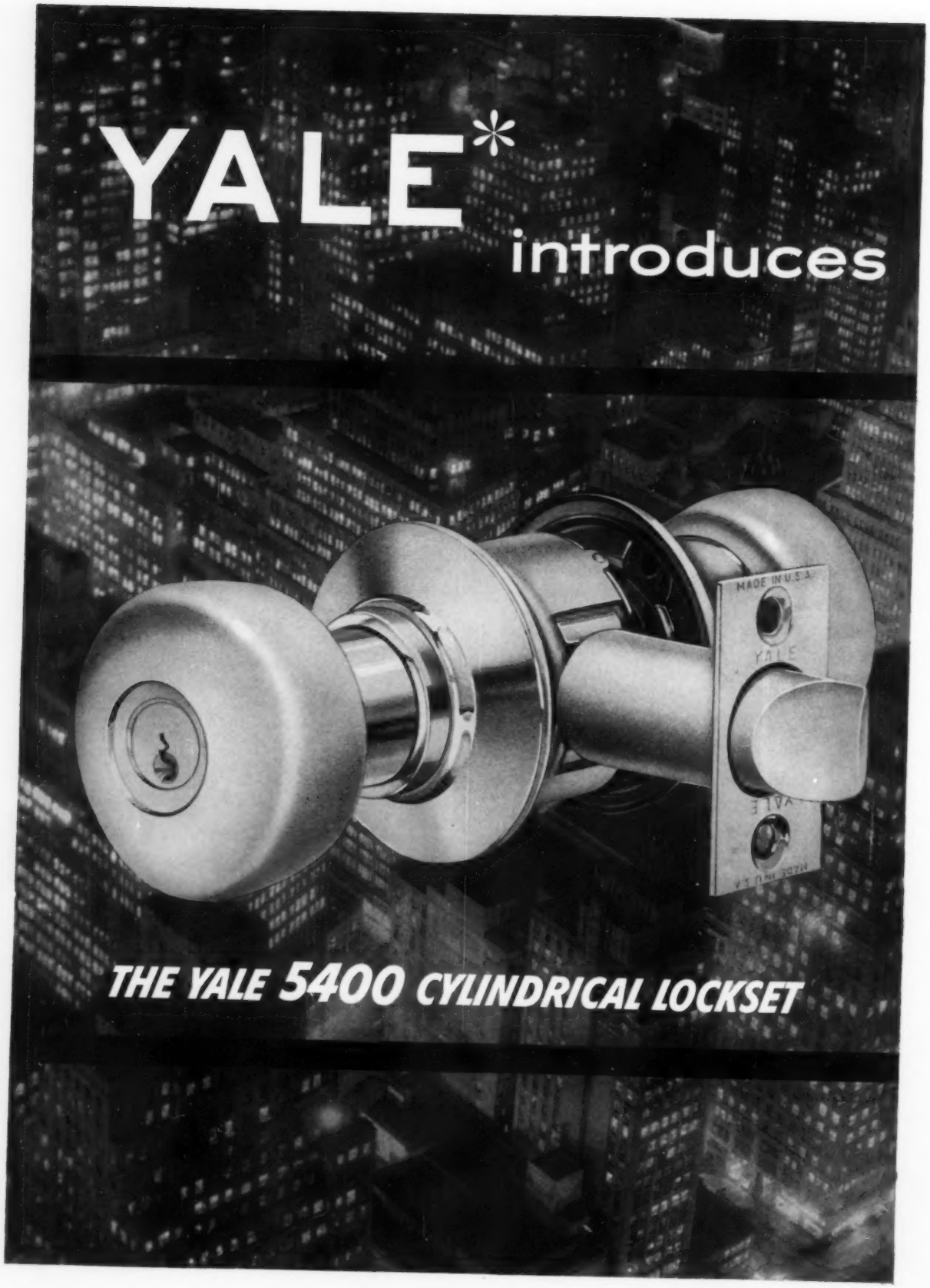
THE ONLY NAME YOU NEED TO KNOW IN PLUMBING FIXTURES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THE YALE 5400 CYLINDRICAL LOCKSET

the newest conception in locks

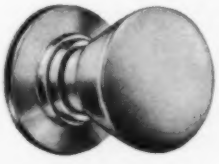
Created for both modern and traditional architecture, this new lock fills the requirements for low-cost installations and modern styling in today's heavy construction.

As an architect, this is a direct invitation to you to be informed of the newest creation in builders' hardware. For full details, write to The Yale & Towne Manufacturing Co., Lock & Hardware Division, White Plains, N. Y.

4 EXPRESSIVE NEW KNOB DESIGNS

BEDFORD cast knob

LITCHFIELD laminated wrought knob (available also in cast metal as GREENFIELD design)



ESSEX cast knob

CLASSIC cast knob

AVAILABLE IN STAINLESS STEEL AND ALSO BRASS, BRONZE, ALUMINUM, CHROME.

*YALE Reg. U. S. Pat. Off

YALE & TOWNE

PROVIDES PERMANENT PROTECTION HERE!

The time to permanently "eliminate" destructive moisture is in the original construction with the use of Sealtight Premoulded Membrane . . . the industries only TRUE vapor seal. All other methods are merely temporary stop-gaps. Ideal for all types of construction . . . commercial, industrial and residential. The installation of Premoulded Membrane not only gives you a warm, dry, more liveable home but one that is also more saleable in the future.

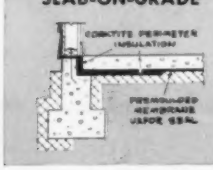
When specifying a vapor seal material be sure it meets these Sealtight standards of quality . . . permeance rating of only .0066 grains per square foot . . . resistant to rot, mold and termites . . . expandable . . . quick and easy to install . . . only Premoulded Membrane meets them all.

SEALTIGHT *Premoulded Membrane*
TRADE MARK

wherever good design requires a TRUE VAPOR SEAL!

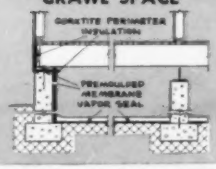
IDEAL FOR ALL TYPES OF CONSTRUCTION

SLAB-ON-GRADE



This illustration shows how the installation of Premoulded Membrane and Corktite completely isolates the slab and superstructure from soil moisture.

CRAWL SPACE



The proper installation of Premoulded Membrane and Corktite removes all danger of condensation and oxidation of metal installations in the crawl space area . . . eliminates the need for ventilation.

BASEMENT

The proper installation of Premoulded Membrane to the exterior of the basement walls as well as beneath the floor slab insures a permanently warm and dry basement.

ARCHITECTS, BUILDERS, DEALERS . . .

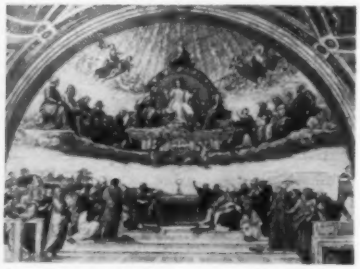
WRITE TODAY for complete information that tells you where, why and how to use Sealtight Premoulded Membrane, the only true vapor seal and Corktite, the resilient, impermeable perimeter insulation.

"Guardian of the Home"

W. R. MEADOWS, INC.

4 KIMBALL ST. • ELGIN, ILLINOIS

(Continued from page 62)



6.

vincing study of the development of Bramante's project, of its fate at the hands of later architects, and of its critical importance in the history of western architecture as a whole.

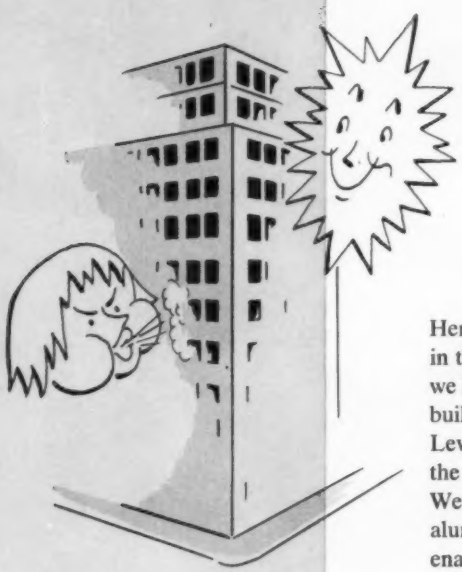
After his Introduction, in which he is entirely too modest concerning the scope and importance of his work, Ackerman devotes his first chapter to a reconstruction of Bramante's scheme. This is illustrated by several magnificently conceived reconstruction drawings in isometric projection. The choice of isometric was a happy one in that it made possible not only the use of true dimensions but also a strong presentation of spatial volume, the essence of Bramante's design. (Fig. 2) In this way the reader can experience Bramante's power in walling off an extensive area of space, giving it direction by a strong axial movement, drama by changes of level using stairs and ramps, and climax in great Exedra. (Fig. 3)

Chapters II-X carefully follow the construction of the project to 1585, at which time, after certain modifications by other architects — especially Pirro Ligorio and Michelangelo — it was essentially complete. In the process Ligorio has substituted a more decorative set of details than had been envisaged in Bramante's stronger and simpler design. Ligorio and Michelangelo between them had also altered the Exedra by closing off the rear to form a corridor, changing the stairs to diagonal flights, heightening the mass above and turning it thereby into the present "Nicchione."

Only one chapter (XI) is given by Ackerman to the later history of the Belvedere, since directly after 1585 the whole complex was ruined by Sixtus V, who quite consciously destroyed the space by building the

(Continued on page 390)

what about expansion and contraction in curtain wall design?



Providing for proper expansion and contraction while keeping the building weathertight is but one of the many engineering and design problems that must be solved before any curtain wall job can be 100% satisfactory. Proper integration of the windows and wall panels is another phase of curtain wall that can best be handled by an experienced manufacturer of both architectural metalwork and windows.

While the design and fabrication of curtain walls may appear to be a simple, easy job, it's actually a highly specialized field that demands the attention of experienced specialists.

Here at General Bronze we have had more than 10 years' practical experience in this new and highly specialized field. Since our pioneering work in 1946 we have designed, fabricated and installed curtain wall systems for many outstanding buildings (United Nations Secretariat Building, the ALCOA Building, Lever House, 99 and 460 Park Avenue Buildings, the RCA Cherry Hill Offices, the Second National Bank Building, Houston, Texas, and others). We have produced curtain wall systems involving aluminum skins, grids with aluminum windows and insulating panels of colored alumilite or porcelain enamel as well as stainless steel grids with glass panels.

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Milwaukee, Wisc.
Architects: Fritz von Grossmann
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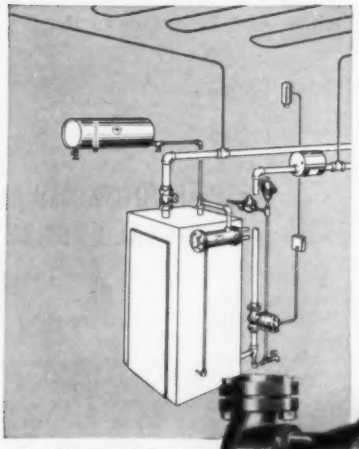

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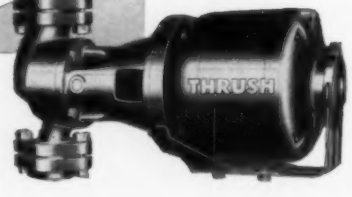

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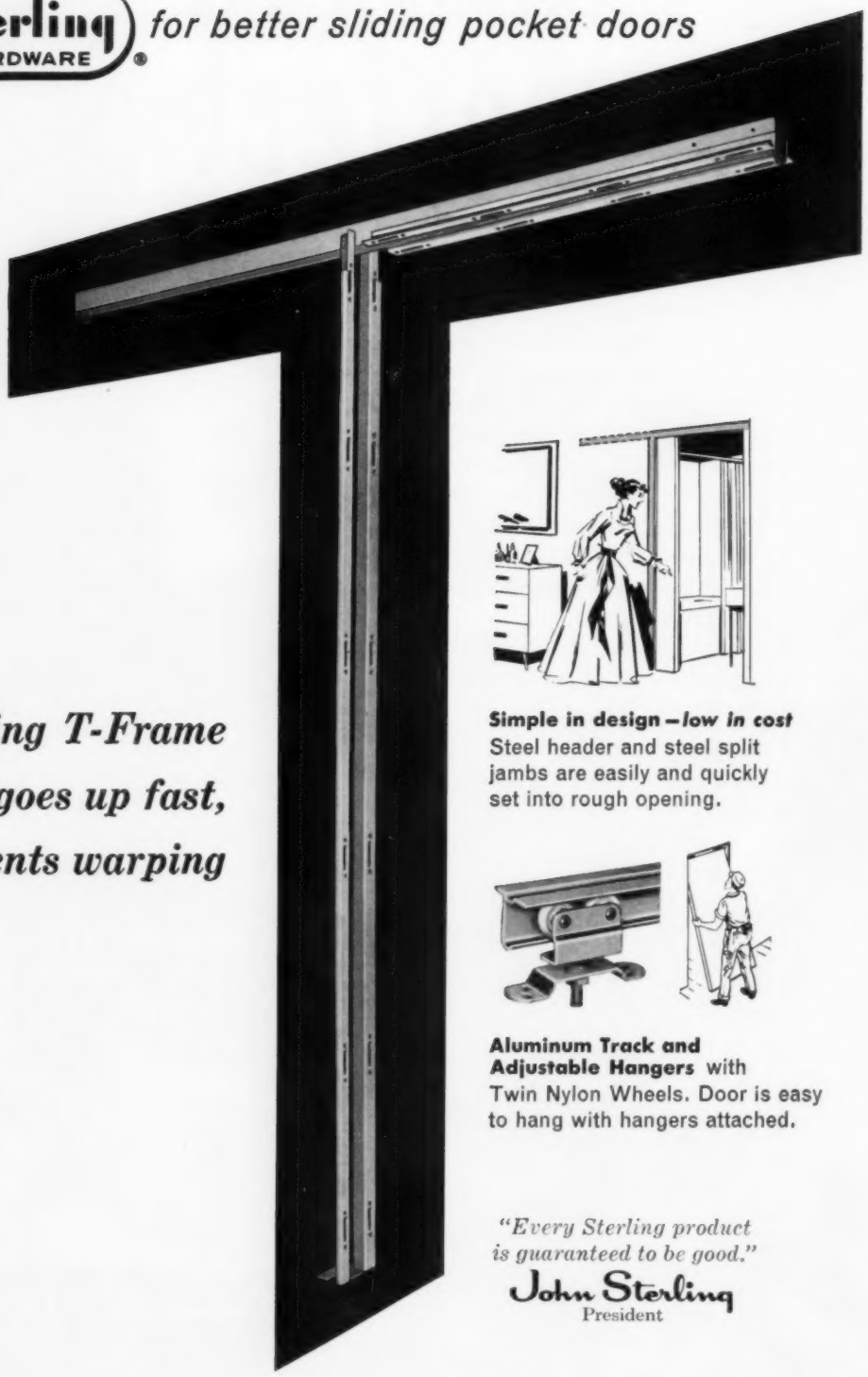

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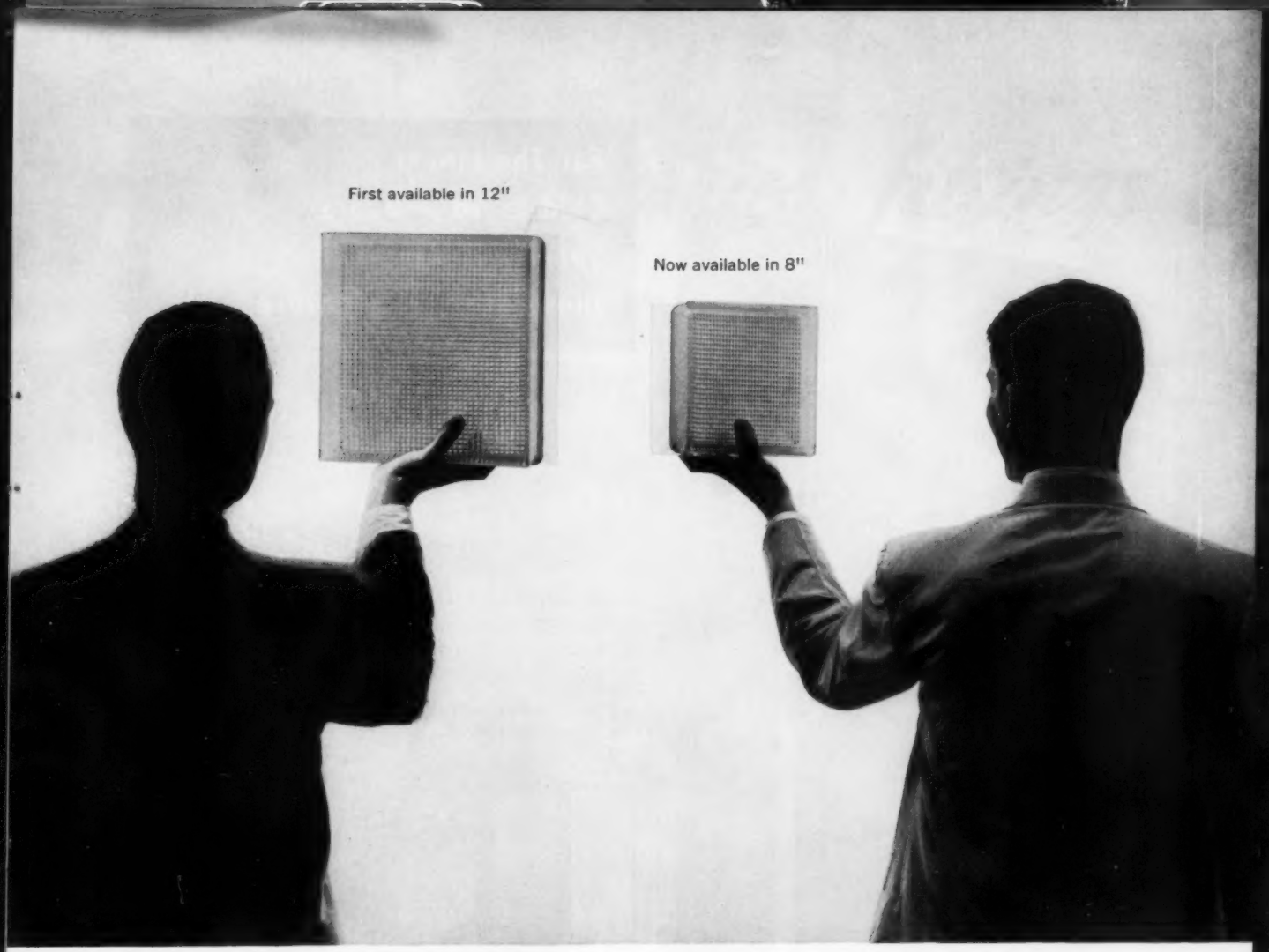

The block that says "*welcome*" to daylight... and "*keep out*" to heat and glare

When you hold a PC Suntrol Block up to an exposure where there is exceptional glare, you get an excellent demonstration of how this exclusive product answers difficult fenestration problems.

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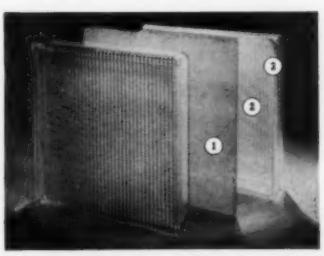

Green, fibrous glass diffusing screen (1) filters light, reduces heat, divides block into two insulating cavities. Internal prisms (2) direct light upward, or diffuse it according to pattern. Exclusive Soft-Lite Edge (3) of opal glass eliminates glare through edge of block.

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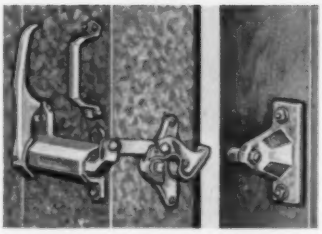

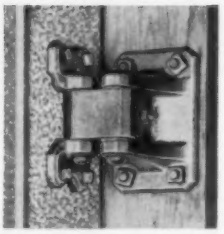

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ONLY WADE HAS the pre-cast gasket that insures speedy, sanitary installation.

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Crawford GARAGE DOORS

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Designed by Engineers Co., Inc.,
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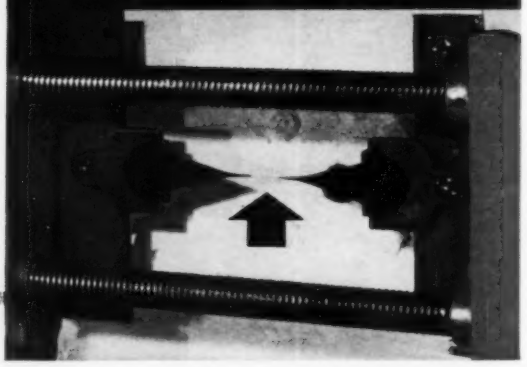

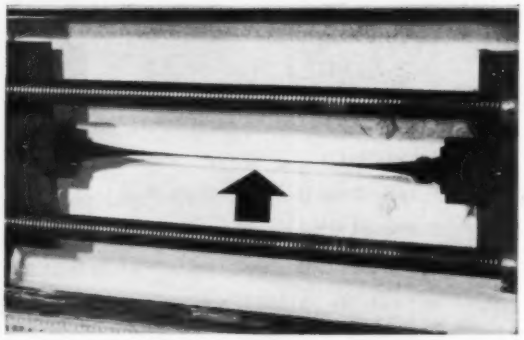

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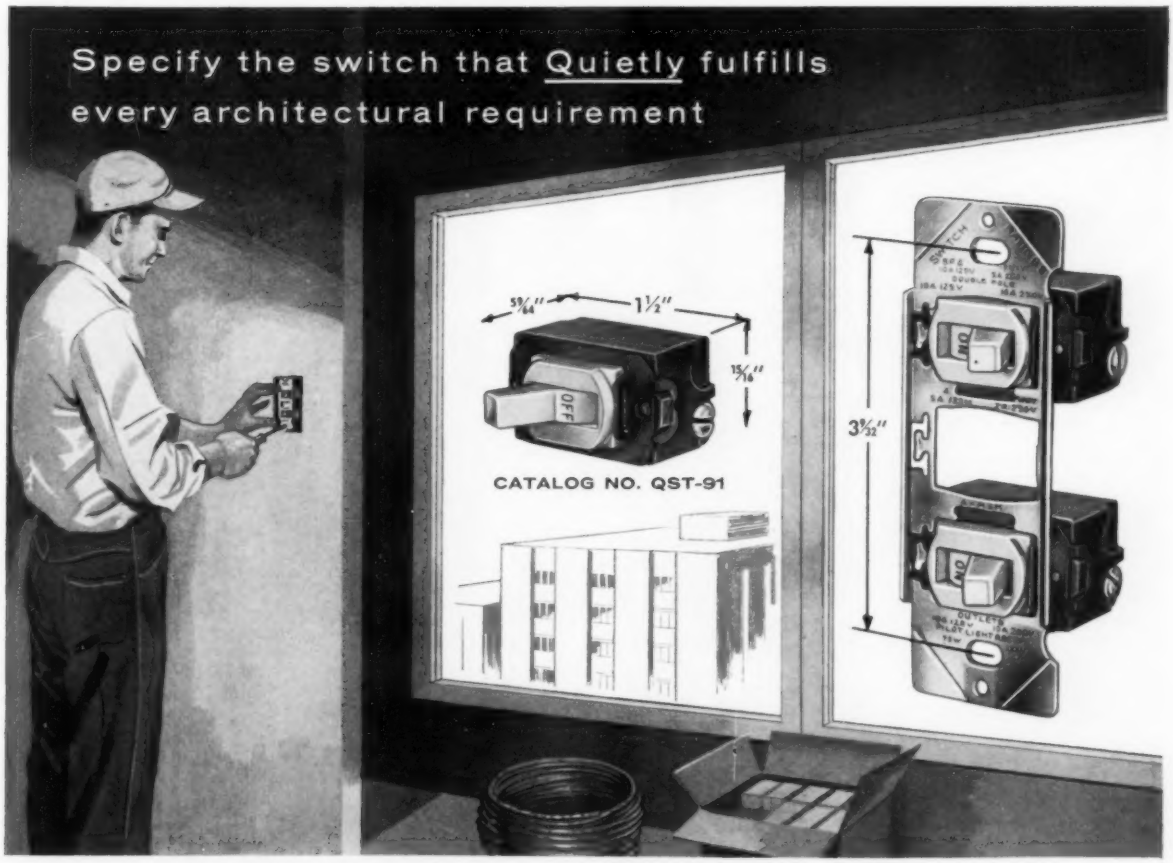

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Consider *installation* costs, and you'll see why a Chase quality drainage system will cost little or *no more* than an ordinary system. Actual comparisons *prove* this!

Chase 3" Copper Drainage Tube fits *within* standard partitions, eliminates costly furring-out construction required with ordinary systems.

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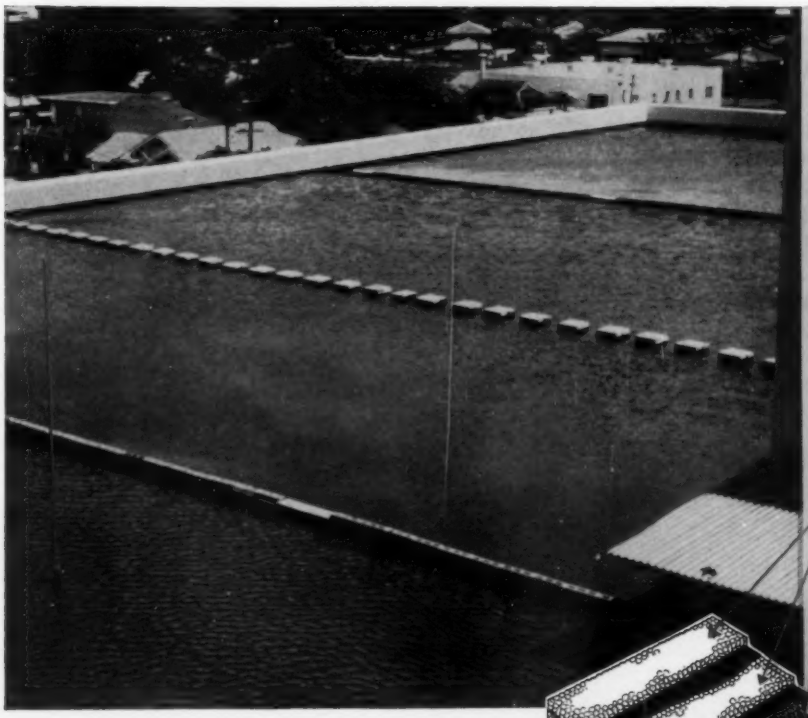
FOR SEARS, ROEBUCK—

Koppers Roof doubles as an aquarium!

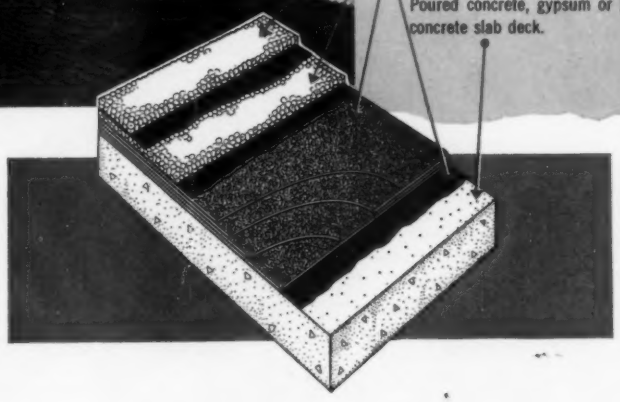


THIS KOPPERS Water-Cooled Roof protects Sears, Roebuck's store in Honolulu, Hawaii. It is covered by six inches of water at all times and "works with" the air-conditioning system to keep the store cool.

ARCHITECT:
Wood, Weed & Associates, A.I.A., Honolulu, T. H.

ROOFER:
J. Russell Hudson Roofing Company, Honolulu, T. H.

KOPPERS SPECIFICATIONS FOR A WATER-COOLED DECK


Two layers of gravel or slag embedded in double pourings of pitch.
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Mopping of pitch.
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Recently, Sears, Roebuck and Co. had a Koppers Water-Cooled Roof installed on its store in Honolulu. This roof is providing excellent protection and is helping to keep the store cool.

But there was a problem.

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see our catalog in ARCHITECTURAL FILE or write for copy

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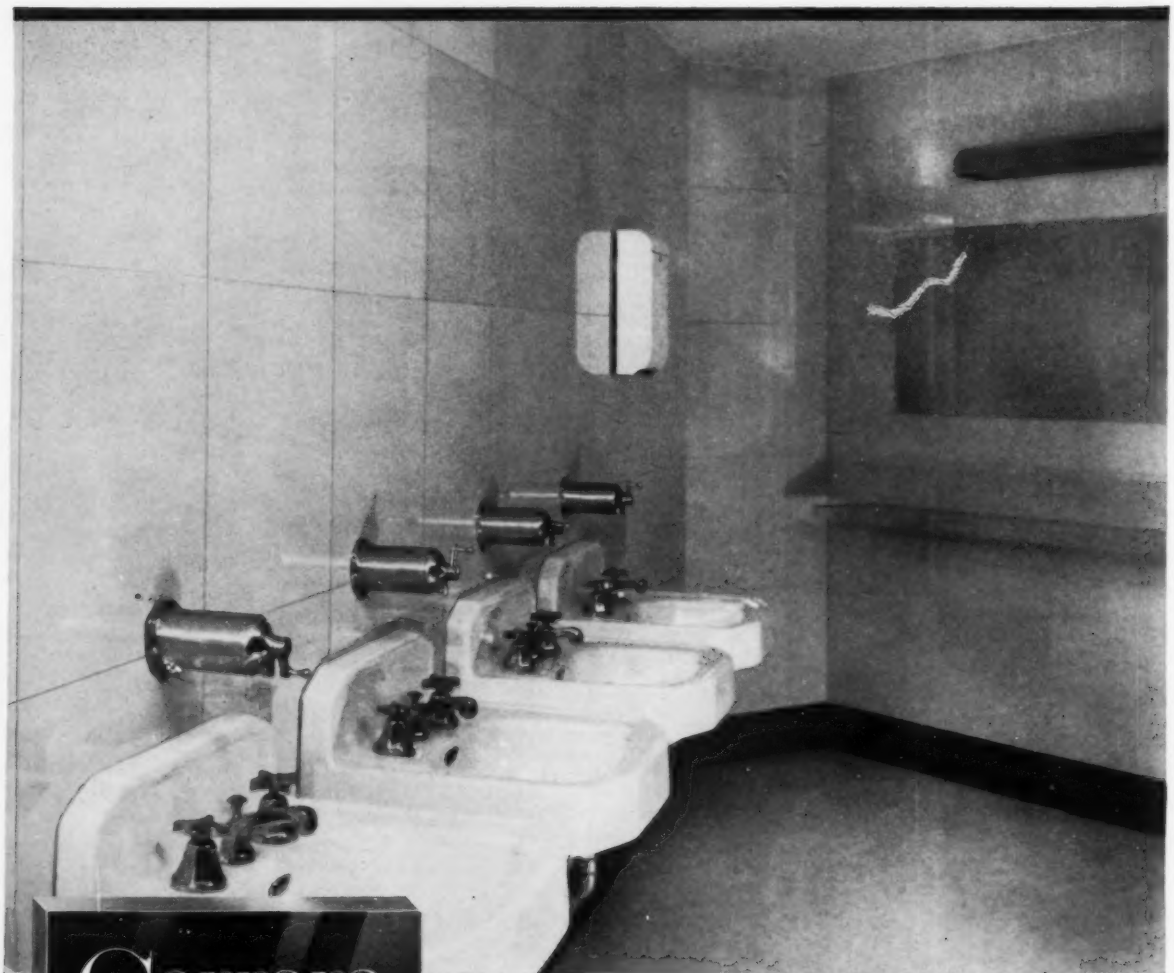
Many leading American architects make Carrara Glass first choice for washroom walls and partitions of important buildings. There are good reasons for this preference.

Carrara is a truly beautiful material. Its smooth, even surface is mechanically ground and polished to a gleaming, lustrous finish that will not craze, crack, stain or fade, even after years of service.

Carrara is all pure glass with a uniform homogeneous structure that is virtually impervious to attack by water, steam, acids or cleaning compounds, and that will not absorb odors.

Carrara is easy to take care of. No expensive, time-consuming maintenance is required. An occasional wiping with a damp cloth keeps Carrara clean and sparkling.

Midland Building, located in Cleveland, Ohio, was designed by Architects Garfield, Harris, Robinson & Schafer, of Cleveland.



Carrara
...the quality structural glass

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A MODEL FOR EVERY TYPE OF DOOR IN ANY TYPE OF BUILDING

DOR-O-MATIC

CONCEALED-IN-THE-FLOOR DOOR CONTROLS

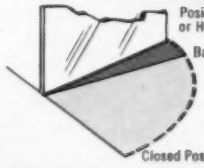

Diagram shows how door is controlled as it opens. Accidental openings are eliminated . . . as are accidental hold-opens. The control also cushions the closing of door.

- BUILT-IN HOLD-OPEN DEVICE
- POSITIVE BACK STOP
- POSITIVE CENTERING
- BUILT-IN LEVELING DEVICE
- NO ACCIDENTAL HOLD-OPEN
- TWO SPEED CLOSING ACTION
- PERMANENT HYDRAULIC OIL SEAL
- POSITIVE UNIFORM CONTROL
- NO SEASONAL ADJUSTMENT
- EASY INSTALLATION

Precision-built Dor-O-Matic door controls are at work in thousands of buildings from coast to coast . . . where they are providing more positive door closing action. There are twenty-five models in all. Each is designed for long service life under all conditions and complete adaptability to contemporary design and function. Only Dor-O-Matic provides all ten of the service advantages listed at left.

Write for Detailed Information and Literature

MADE BY THE BUILDERS OF THE INVISIBLE DOR-MAN AUTOMATIC DOOR CONTROL

SEE SWEET'S ARCHITECTURAL FILE

17e

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DOR-O-MATIC

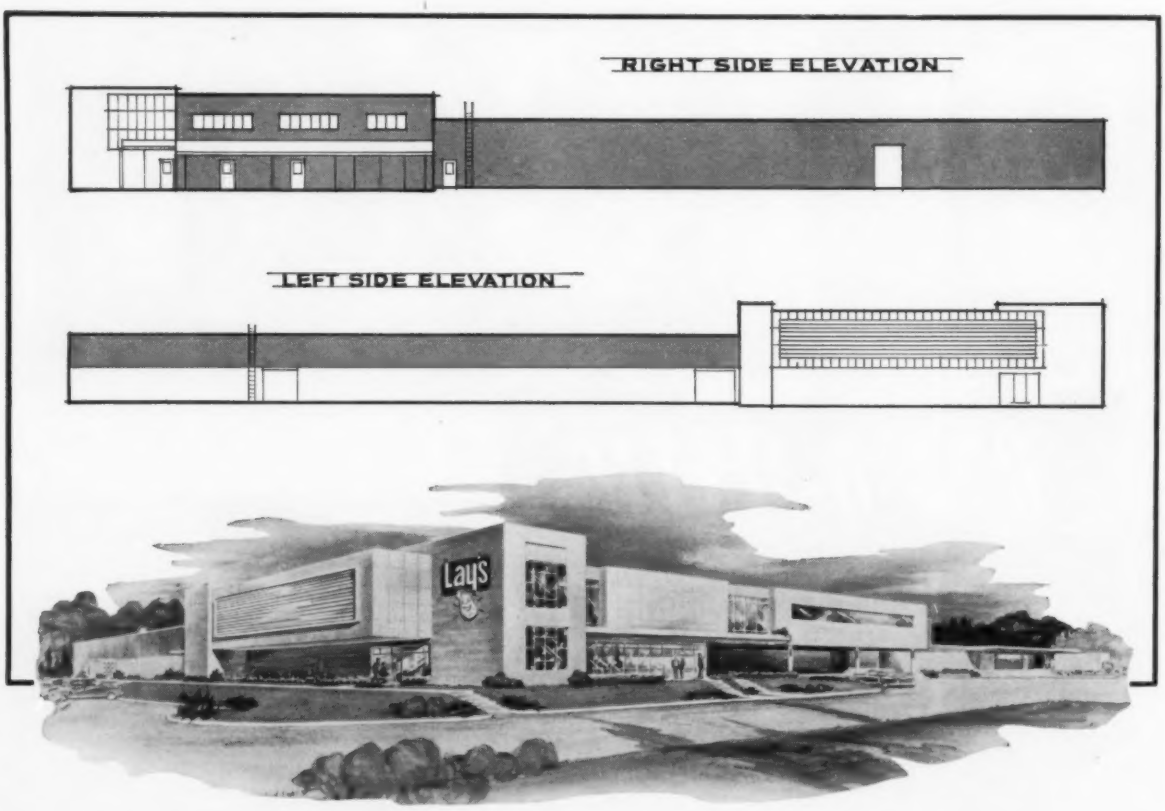
Division of Republic Industries, Inc.

4444 North Knox Avenue • Chicago 30, Illinois

IN CANADA: Dor-O-Matic of Canada, 550 Hopewell Ave., Toronto 10, Ont.

EXPORT REPRESENTATIVES: Consultants International, 11 West 42nd St., New York 36, N.Y.

5563



Project: Lay Potato Chip Co. plant, Chamblee, Ga. Architect: Locatell, Inc., Atlanta. General Contractor and Owner: J. A. Jones Construction Company, Atlanta. Processor: Overly Manufacturing Company, Greensburg, Pa. Process Engineering: Douglas McBean, Inc., Rochester, N.Y. Siding Subcontractor: American Steel Band Co., Building Products Div., Pittsburgh, Pa.

Aluminum, Alodized with Architectural Alodine®, needs no painting, retains its finish for life

This modern food processing plant in Chamblee, Ga., has decorative aluminum panels of deep green. Their Alodized finish will retain its new look for life. That's because this revolutionary new chemical process converts aluminum surfaces to an amorphous phosphate. And because it produces a finish that adds years to the already long life of aluminum. Colors range from gray green to a deep green resembling the patina of copper.

Alodizing with Architectural Alodine offers two other advantages, too. It reduces the reflectivity of untreated aluminum by 30% or more. It is much less expensive to use than the more complex anodizing process—takes less time, requires smaller, simpler and less costly equipment.

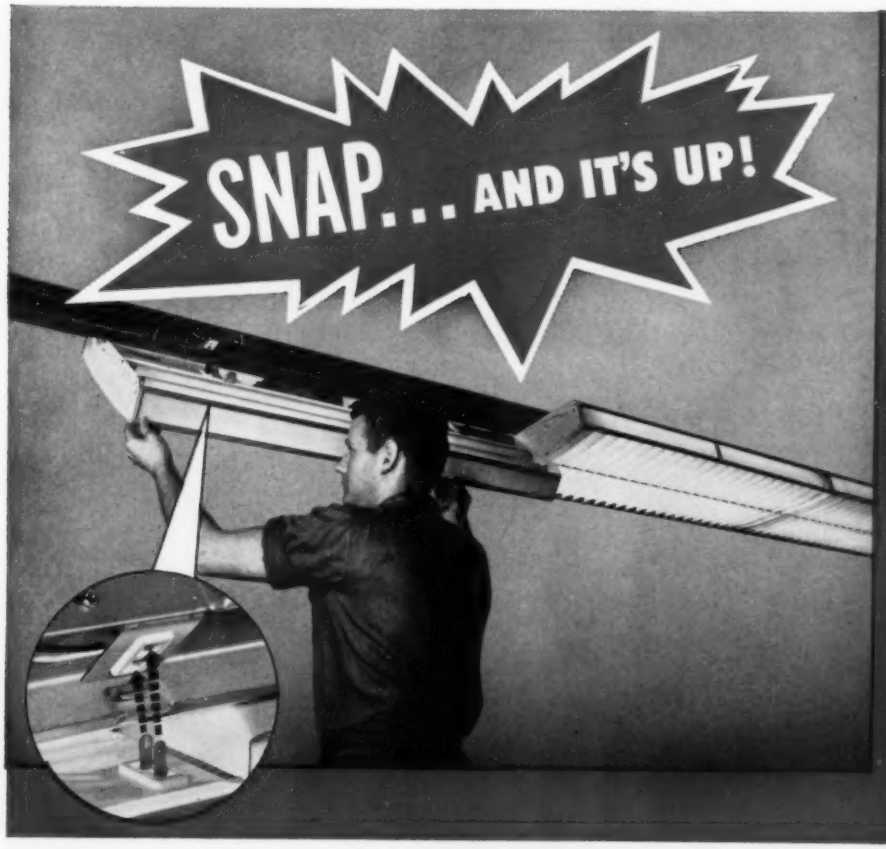
Since the use of Alodized Architectural Aluminum is spreading rapidly—in the construction of industrial plants, commercial buildings and dwellings—you will want complete information about its possibilities. Write for data—of course without obligation. Or see our literature in Sweet's Architectural File.

Specify Alodized Architectural Aluminum for greatest protection and least maintenance

AMERICAN CHEMICAL PAINT COMPANY, Ambler 22, Pa.

DETROIT, MICHIGAN NILES, CALIFORNIA WINDSOR, ONTARIO

CHEMICALS ACP PROCESSES

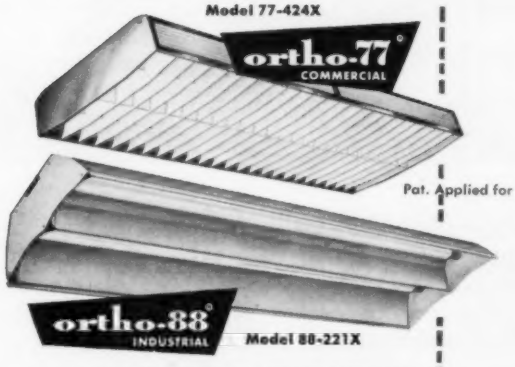


1 Telescoping sections of UNI-RACE assembled and wired on the floor.

2 UNI-RACE, in 24′ to 48′ assemblies, can be hung from bar joists, I-beams or stems.

3 Fixtures snapped into place in seconds without tools.

HERE'S BETTER LIGHTING AT HALF THE COST



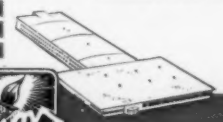
FEATURES THAT DEFY COMPARISON

- **ON-JOB POWER SOURCE** Before fixtures are installed, receptacles in UNI-RACE provide power source for tools and temporary lighting.
- **NO FIXTURE STORAGE** Fixtures need not be delivered until premises are painted. The units can then be snapped into place—clean and factory fresh.
- **VARIABLE SPACING** Fixtures can be mounted in continuous rows or at intervals of 4, 8, 12 or more feet—added, removed or respaced at any time.

The Gibson ORTHO Fixture is a completely new concept in commercial and industrial lighting design. The exclusive UNI-RACE, shipped separately from the fixtures, provides straight alignment, exact fixture spacing and a fixed power source (receptacle) for each fixture. It banishes those pesky aligning problems and eliminates all electrical work on the fixture itself—just take the units as they come from the box and snap into place at any desired interval of 4′ or 8′ on the UNI-RACE.

All of which adds up to a 50-percent saving in labor and material—often more—unheard of flexibility to the user, and gives you a better-looking, higher-quality job.

There are many other advantages you ought to know about. Drop us a line today, we'll gladly send you complete information about the remarkable new ORTHO-77 and 88 for commercial and industrial applications.



Gibson LIGHTING

GIBSON Manufacturing Co.

1919 Piedmont Circle, N.E., HEmlock 2391, Atlanta 5, Georgia

IMPORTANT NEWS ABOUT THE NEW GRADE NAMES*

FOR WEST COAST LUMBER

EFFECTIVE

MARCH 15 1956

Orders placed under Rule #14 may be graded and stamped under that rule *for a limited period* after March 15. This is to accommodate stocks in the process of manufacture or on hand at yards or mills.

All specifications for structures to be built after March 15, 1956, should be under the new rule, Rule #15.

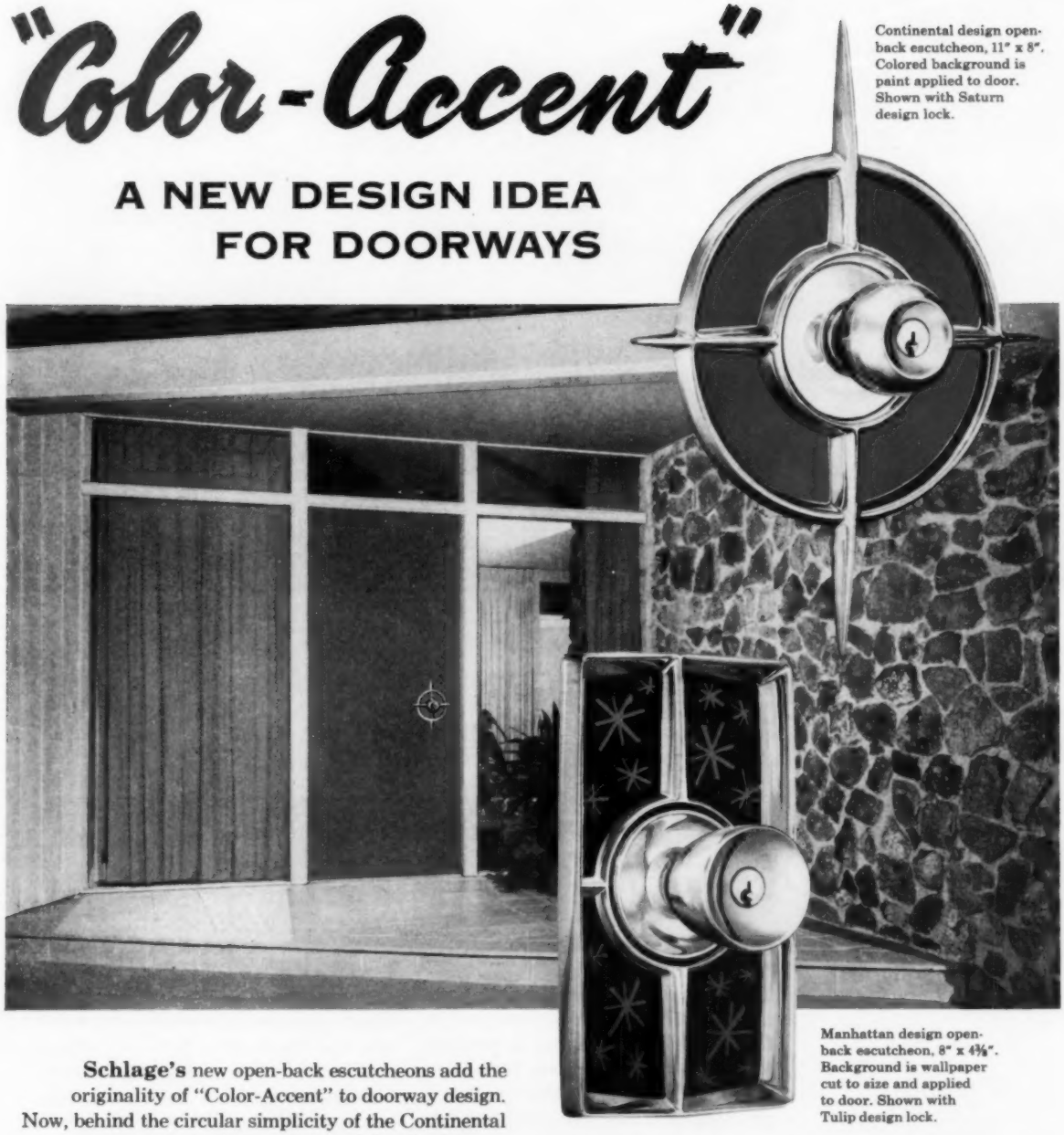
If you have not received your free copy of Rule #15, write to West Coast Lumbermen's Association, 1410 S. W. Morrison, Portland 5, Oregon.

*Applies to Boards, Dimension and Timbers

DOUGLAS FIR • WEST COAST HEMLOCK
WESTERN RED CEDAR • SITKA SPRUCE

"Color-Accent"

A NEW DESIGN IDEA FOR DOORWAYS



Continental design open-back escutcheon, 11" x 8". Colored background is paint applied to door. Shown with Saturn design lock.

Manhattan design open-back escutcheon, 8" x 4¾". Background is wallpaper cut to size and applied to door. Shown with Tulip design lock.

Schlage's new open-back escutcheons add the originality of "Color-Accent" to doorway design. Now, behind the circular simplicity of the Continental or the rectangular symmetry of the Manhattan, an endless variety of colors and textures (wallpaper, grass cloth, pigskin, patterned metal) can be introduced to contrast with door surfaces, harmonize with adjoining walls, complement any part of the doorway or surrounding decorative treatments. Low in cost, yet rich in appearance, Schlage's "Color-Accent" escutcheons (available in brass, bronze, or aluminum) can be used with a wide assortment of Schlage lock designs. As original in concept as the Schlage cylindrical lock, the new open-back escutcheons bring to doors a "Color-Accent" as modern as today's color-filled homes.

Send for New "Lock Fashions" Brochure #651 - A-3
For colorfully illustrated applications of the new "Color-Accent" concept, attractive suggestions in doorway decoration, and complete information on Schlage residential lock and escutcheon designs, write today for this 4-color, 12-page brochure . . . or consult your local hardware supplier.

SCHLAGE

SCHLAGE LOCK COMPANY
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for the "Buying Mood"

PALA SHOPPING CENTER, SAN JOSE, CALIFORNIA,
has center bay of 60-foot span with lower wings at either side. Clerestory windows placed beneath overhanging roof of center section introduces natural light into store interior. Architect: Victor Gruen and Associates, San Francisco and New York; Lew Jones Construction Company of San Jose was general contractor.

This handsome, uncluttered shopping center is typical of the results achieved by skillful use of engineered timber construction. Permanent and maintenance-free, heavy glulam members by Timber Structures, Inc. bring genuinely economical construction while creating a pleasant, natural atmosphere conducive to the "buying mood". Hundreds of outstanding store buildings utilize the beauty and economy of Timber Structures arches, beams and trusses which are available in all parts of the country. For detailed information see your regional Timber Structures representative; or write for new booklet, "Modern Construction", which contains typical applications and authoritative data for designing timber members for highest quality construction.

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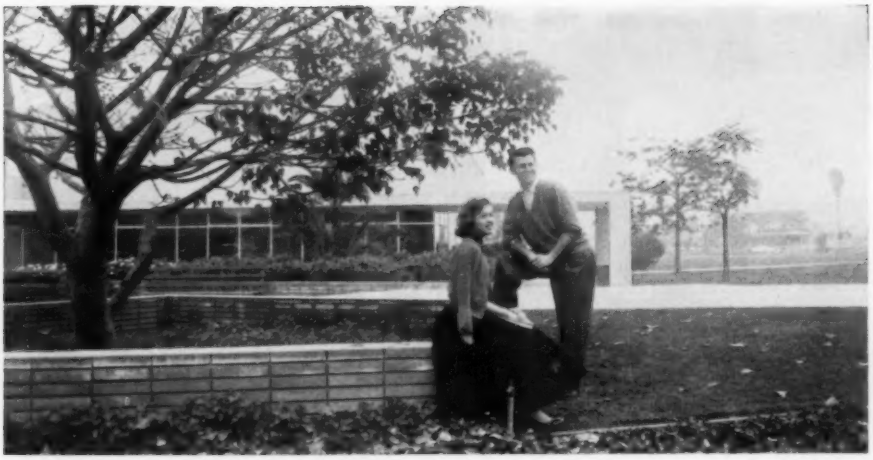

Even on a cloudy day

your school can be a brighter place!

Even on this misty dim day, daylight fills the room. And the view brings in a feeling of freedom.

44 out of 45 teachers surveyed in a research project say that "daylight wall" type classrooms have educational merit. Here are two typical comments:

"Students do not get tired and restless, because there is no feeling of confinement."

"The lighter, brighter surroundings create a good environment for learning."

Send for *your* copy of the complete research report by Paul R. Hensarling, Director of Administrative Research and School-Community Relations for the Port Arthur, Texas, Independent School District.

Read the column at the right for full information on L·O·F Daylight Walls. For immediate cost estimates, etc., call your Libbey·Owens·Ford Glass Distributor or Dealer (listed under "Glass" in your phone book).

L·O·F GLASS

DAYLIGHT WALLS

LIBBEY • OWENS • FORD • *a Great Name in Glass*

Daylight Wall Facts

With L·O·F Daylight Walls there is less wall area to paint and maintain. Construction costs are lower. Artificial lighting isn't needed so often. In cold climates, you can cut heating costs by using Daylight Walls of *Thermopane*® insulating glass.

Technical Information

Natural daylight is the primary source of light for the classroom. Because daylight often varies greatly from hour to hour and day to day, the problem is to get *enough* light on the dull days and provide flexibility of *control* with simple blinds or shades. The cloudiest weather occurs during the school year, so windows should be designed to admit the most light possible on the dullest day. The clear glass in a Daylight Wall transmits from 83% to 89% of the light—more than any other form of glass.

The following minimum light levels should be maintained:

	Foot-candles
Classrooms—on desks and chalk boards	30
Study halls, lecture rooms, art rooms, offices, libraries, shops, laboratories	30
Classrooms for pupils who partially see and those requiring lip reading—on desks and chalk boards	50
Drafting rooms, typing rooms and sewing rooms	50
Reception rooms, gymnasiums and swimming pools	20
Auditoriums (not used for study), cafeterias, locker rooms, washrooms, corridors containing lockers, stairways	10
Open corridors and storerooms	5

For complete information on how to get the best lighting, how to arrange desks for maximum light, how to decorate for best results, how buildings should be oriented, etc., mail the coupon. We'll send you a free copy of our full-color booklet "How to Get Nature-Quality Light for School Children".®

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Send me Daylight Walls booklet M-12 and a copy of the Hensarling Report.

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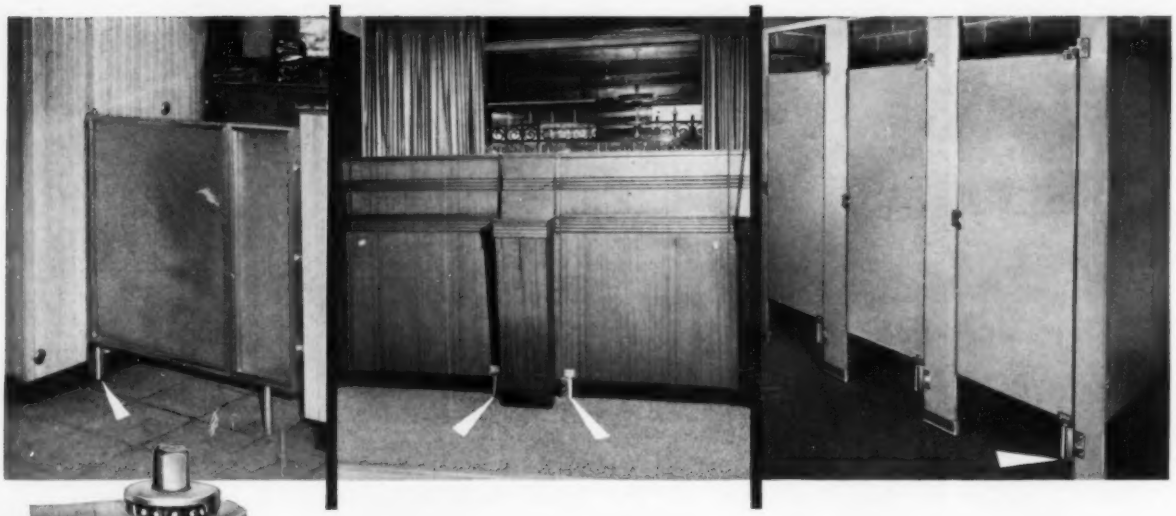
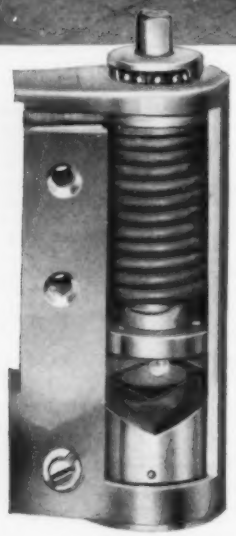
dwarf door CLOSERS

SILENTLY

bring office rail or half partition gates and lavatory stall doors to a *gentle close*





In keeping with the new design and sound quieting trends of the MODERN office or factory. No flip-flapping or slamming of office rail gates or lavatory stall doors when under the hydraulic control of RIXSON no. 350 series closers. Available for pivotal hanging or hinged doors . . . single or double acting . . . with over a dozen different attachment combinations to meet most any installation problem.

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THE OSCAR C. RIXSON COMPANY

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General Electric Engineering Building, Cleveland, Ohio. Architects: Blaw Knox, Pittsburgh, Pa. Contractor: George A. Rutherford Co., Cleveland, Ohio. Type H Curtain-Wall with spandrel panel. Exterior is embossed aluminum sheet. Insulation 1 inch thick Fiberglas covered on inside with aluminum sheet. Ventilators are project-out type. Two story building. Curtain-Wall on one elevation.

Cut Construction Time with Lupton Curtain-Walls

Construction schedules can be shortened by weeks, or even months, with Lupton Curtain-Walls. Window and wall units are prefabricated from the plans, and installed as the building framework is completed. There's no on-the-site delay and no waiting on the weather. Installation is done from within the building.

Here's another big advantage with Lupton Curtain-Walls . . . fabrication and installation are done under one contract. You are relieved of all construction and installation details.

Lupton Curtain-Walls are "your" walls. You choose the window style. You choose the panel material from aluminum, stainless steel, glass, or porcelain enamel. The wall panels can be as severe or as colorful as you want, and the beauty is permanent. Aluminum frames, aluminum windows and lifetime panels *keep* Lupton Curtain-Walls "new".

Plan with the new Lupton Simplified Curtain-Wall System. Send for brochure detailing and illustrating this modern way to build.

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LUPTON

METAL WINDOWS AND CURTAIN-WALLS

mural in *Suntile* ceramics

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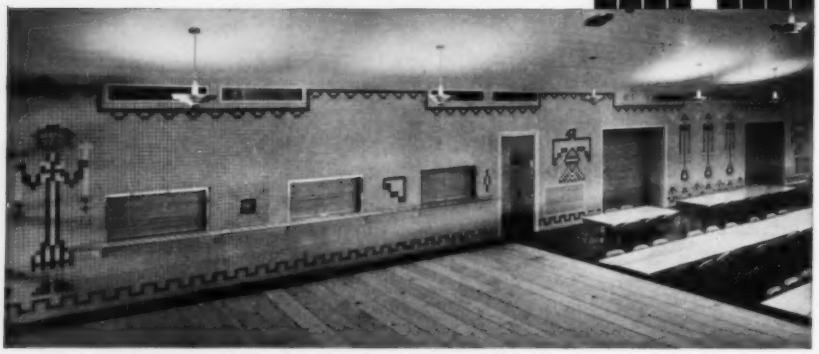
In this new Arizona high school cafeteria a mural in Suntile Ceramics, 100 ft. long by 10 ft. high, combines fresh decorative interest and a durable, easily maintained surface.

Conceived by architect Edward S. Varney, and developed by the school's art students, the mural is based on colorful Navajo Indian motifs whose geometric forms could be readily reproduced in 2″ x 2″ unglazed, Satinized Suntile Ceramics. Colors are grey, black, white, turquoise, rose, yellow, jade green and red.

SPECIAL DESIGN SERVICE

Layouts for this tile installation were made by our Special Design Service—a group of trained ceramic artists who are prepared to execute your own sketches faithfully or submit suggested tile designs—at no obligation to you, of course.



Mesa High School, Mesa, Arizona • Edward S. Varney, architect

For further information on our Special Design service just write us. Address Dept. AR-36,

THE CAMBRIDGE TILE MFG. CO.

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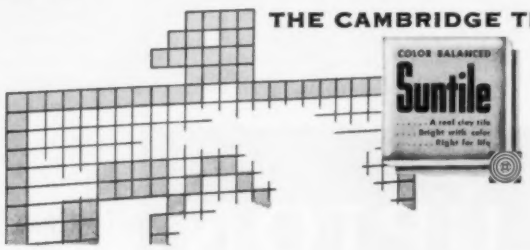
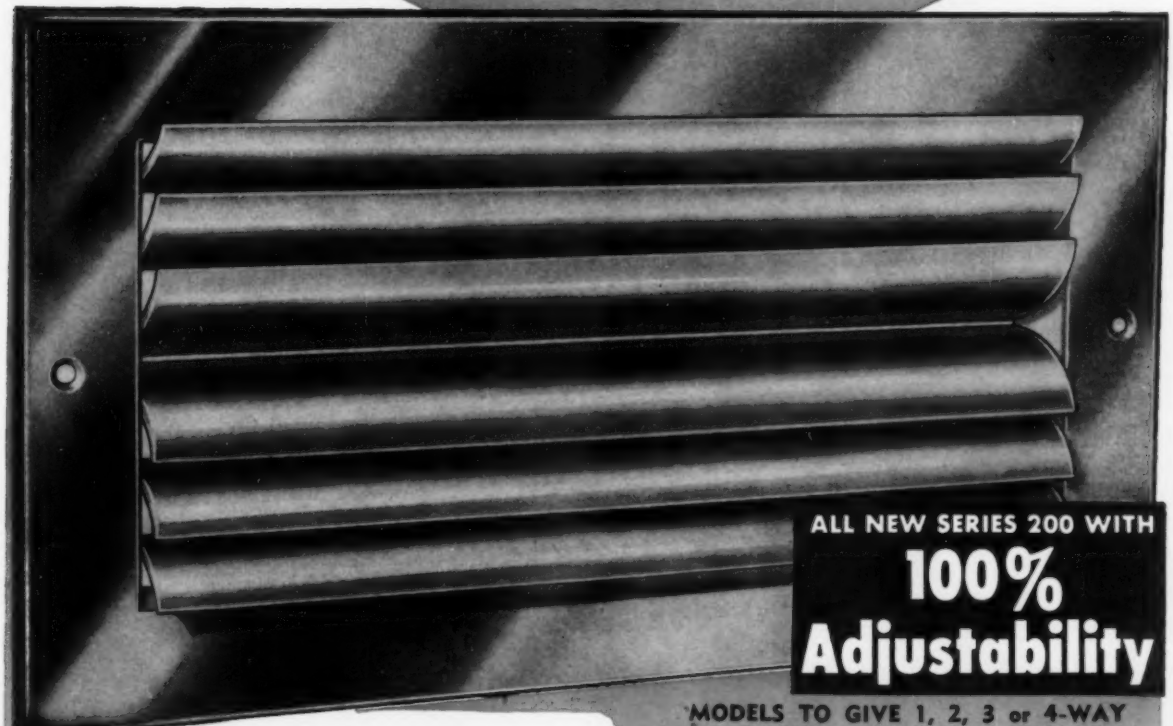


TITUS

Sidewall and Ceiling Grille



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- **Amazing New Solid Section Louver Design Curved for Positive Air Control.**

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Surface type Norton Door Closers installed as original equipment in 1923 are still serving faithfully

AND NOW— the same rugged dependability plus streamlined modern design is available in

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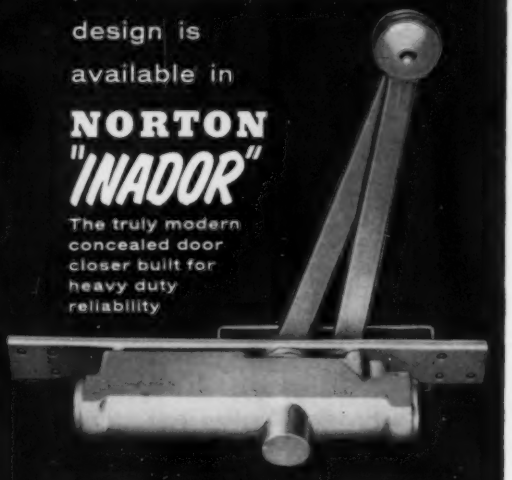

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Only The "INADOR" has all these top-quality NORTON features.

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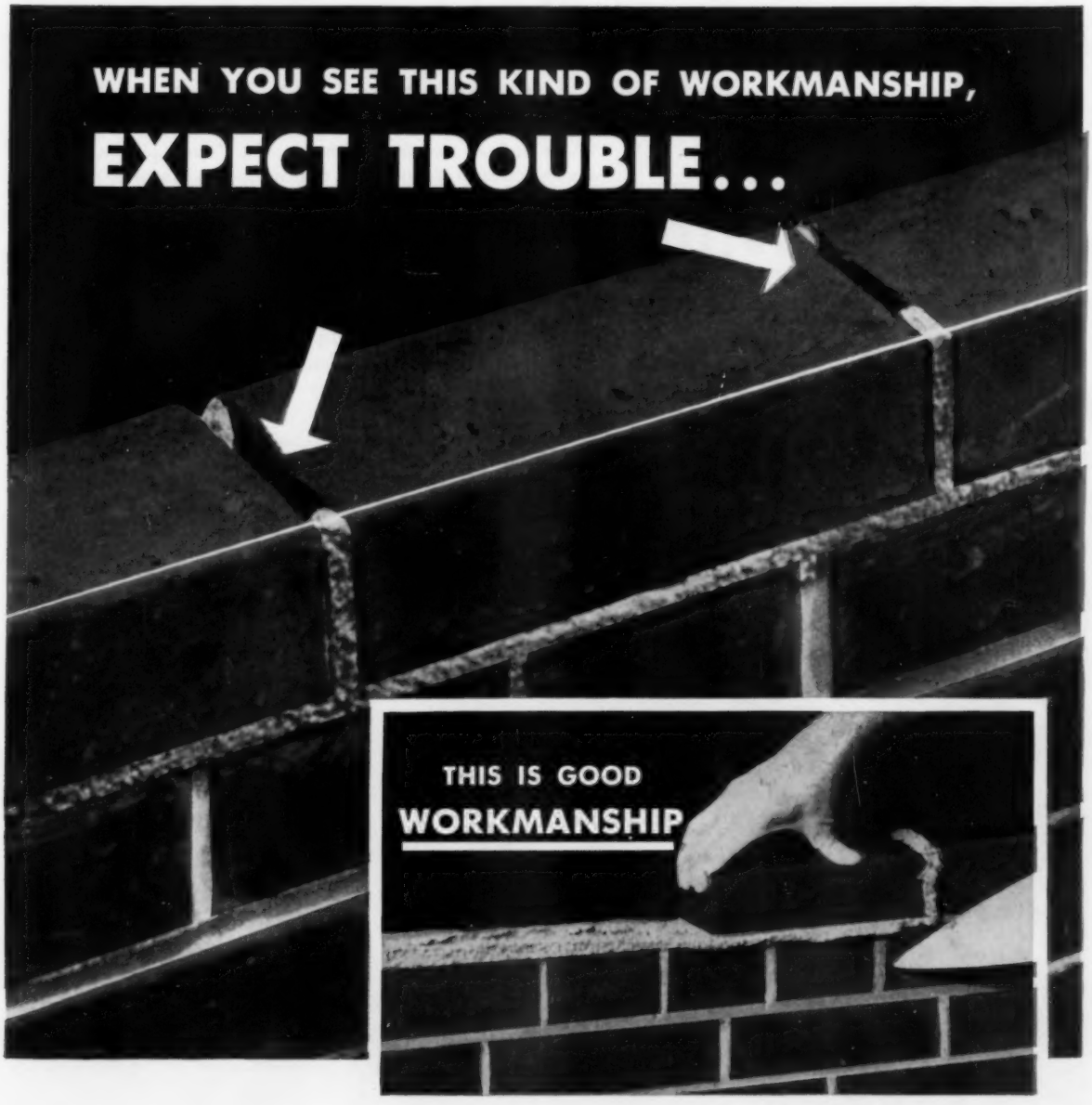

GOOD workmanship is one of the most important factors in preventing leaky brick walls.

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Expect trouble when mortar is dabbed only on the corners of the brick, even when the head joint is slushed.

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Brixment mortar has greater plasticity, higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

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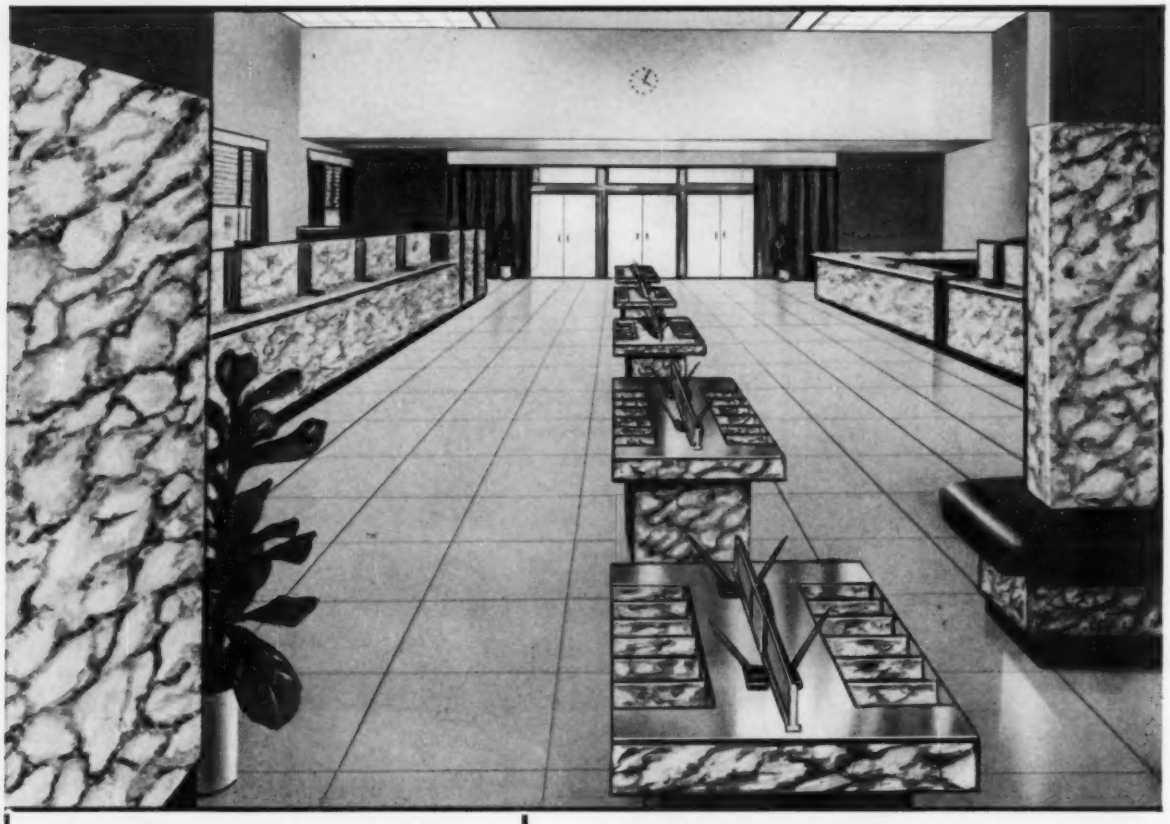

General Electric Company
Section AR 3-6
P.O. Box 5911, Cleveland 1, Ohio

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Over 70 G-E Textolite patterns and colors!

See the complete line of G-E Textolite patterns soon—including 14 authentic-looking wood-grain designs. You'll be delighted with the variety and the beauty of G-E Textolite.

Progress Is Our Most Important Product

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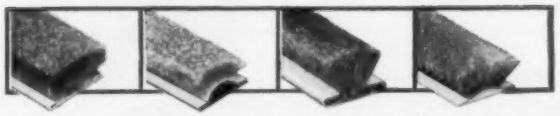
Look to *Standard Products* for DRAFTITE*

THE EFFICIENT WEATHERSEAL

Best-Vent Double-Hung Windows, as illustrated, supplied by *Per-Fit Products Corporation, Indianapolis 5, Indiana.*

The *Best-Vent* Double Hung Windows in this substantial, popular-priced home are sealed from wind, dust and rain with DraftTite Y-579.

SNAP-ON WEATHERSTRIP (Y-579)—Measures .07" inside opening with a .214" leg height. Heavy pile fabric is secured under beaded edges. Available in aluminum or stainless steel core.



Illustrated are some of our many Standard Line DraftTite weatherstrip sections available for any metal window or door sealing problem.

An increasing number of architects are specifying metal windows sealed with wool pile. DrafTite is nationally recognized as the leader in this field. It is used by the millions of feet, and for years proved better than any other seal for similar purposes.

Test results show that DrafTite is two and a quarter times more wind resistant than the sealing standards that industry specifies. DrafTite is a *silent* seal that insures an *even* seal throughout the life of the window. For complete client satisfaction, you'll find there's nothing better than metal windows sealed with DrafTite.

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be sure
your homes use
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- The ONLY glass-lined water heater with 17 years of success behind it. There's only one Permaglas, and it's made by A. O. Smith.

Through research A.O. Smith *... a better way*

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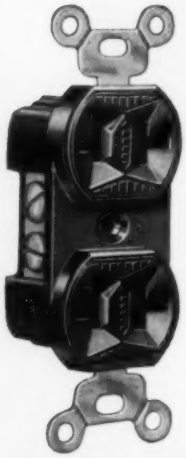
IT PAYS TO HAVE GOOD CONNECTIONS — HUBBELL

FIRST ORDER OF EVENTS...

ADEQUATE WIRING WITH HUBBELL QUALITY DEVICES

Pictured below, the beautiful Rochester Community War Memorial, new home for great events . . . today a convention, tomorrow a circus, next week an ice extravaganza or a water ballet. Year-in and year-out one great activity follows another and each one is dependent on the *safe* and *uninterrupted* flow of electrical power.

This building is a fine example of adequate wiring at its best because the wiring is planned for the "years ahead" as well as for the "needs of today". That's why Hubbell wiring devices, tops in quality and engineered for peak performance, were specified. If adequate wiring is *your* objective, remember — *It Pays To Have Good Connections.* Specify Hubbell.



Cat. No.
9595
Specification Grade
T-slot Duplex Receptacle
10 Amp., 250 V.
15 Amp., 125 V.

THE COMMUNITY WAR MEMORIAL BUILDING, ROCHESTER, N. Y.
(Second unit of Rochester's Civic Center)

ARCHITECT	CONSULTING ENGINEER	ELECTRICAL CONTRACTOR	HUBBELL SUPPLIER
Wasserdorp and Northrup	Robson and Woese, Inc.	Driscoll Electric Co.	Graybar Electric Co., Inc.
Rochester, N. Y.	Syracuse, N. Y.	Rochester, N. Y.	Rochester, N. Y.

Cat. No.
20403
Hubbellock
4-Wire Receptacle
30 Amp., 600 V. AC
20 Amp., 250 V. DC

ABOUT THE BUILDING:

The Community War Memorial will provide facilities for all types of public events. The auditorium has a clear span of 260 feet. Six thousand persons can be accommodated on the permanent seating deck and provision has been made for four thousand additional temporary seats. It has an 85' x 200' ice rink, a stage 100' x 40', eighteen offices and eight special meeting rooms.

Hubbell's T-slot Duplex Receptacles are installed throughout the building for safe, trouble-free "plug-in connections" wherever needed. Rugged, premium quality 4-Wire Hubbellock Receptacles are installed around the ice rink to safely accommodate floodlights, spotlights and other electrical equipment. For the first time, these units are flush-mounted and now can be offered with a special strap for other flush-mounted applications.

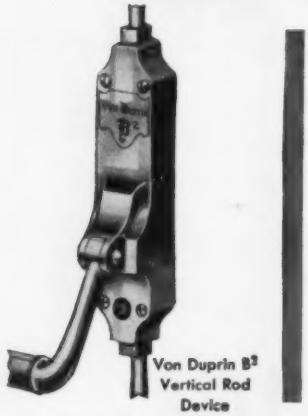
Harvey Hubbell, INC.

DEPT. AR — BRIDGEPORT, CONNECTICUT

Von Duprin

FIRE AND
PANIC EXIT DEVICES

Tough!...Tested!...Trusted!

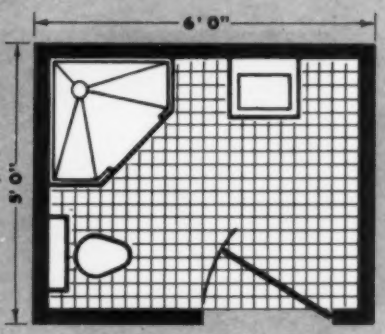


Von Duprin B² Vertical Rod Device

● Here's the sort of treatment that Von Duprin exit devices absorb every day—year after year. And can they take it! Many of Von Duprin's devices have been in constant service for more than 40 years . . . with just normal maintenance. This durability, performance and precision design have teamed to make Von Duprin the preferred line of exit hardware. You can rely on Von Duprin to serve your daily traffic easily . . . and, most important, to be ready for that once-in-a-lifetime emergency. Von Duprin fire and panic exit devices—"the safe way out!"

VONNEGUT HARDWARE CO. • VON DUPRIN DIVISION • 402 WEST MARYLAND STREET, INDIANAPOLIS 9, INDIANA

Complete Bathroom
FITS IN 5 X 6 FOOT SPACE



ECONOMY ANSWER FOR THE SECOND BATHROOM

An extra bathroom is a demand item these days — whether it be in new home construction or in remodeling. Since the bathroom costs more per square foot than other areas, it pays to economize on that space when you build or remodel. The corner design FIAT Shower holds the key to this economy as the diagram clearly indicates.

Only 30 square feet will provide an attractive, convenient and *complete* bathroom! You'll save not only on area, but on expensive materials as well. With a FIAT "packaged" Shower there's no need for costly tiling or other special wall covering. It is a self-contained plumbing fixture that requires no special room or construction preparation, yet is designed to give a "built-in" appearance.

The CORNER CADET model shown here has the quality look home owners are seeking, and it comes in a choice of colors to match other fixtures. Its shape and styling is modern and appealing . . . its finish is sparkling, sanitary and long-lasting of highest quality, acid-resistant baked-on enamel . . . its floor is the finest — solid, sparkling *terrazzo* precast to assure proper drainage and leakproof permanence. This FIAT floor affords a warm, foot-gripping surface that's easy to keep clean.

Find out the small cost of adding the finest shower bathroom to any plan. Send coupon today — no obligation of course.

FIAT METAL MANUFACTURING CO.
Since 1922 . . . First in Showers / *Packaged Showers • Doors • Floors / Toilet Room Partitions*

FOUR COMPLETE PLANTS: Long Island City 1, N. Y.; Franklin Park, Ill.; Los Angeles 63, Calif.; Orillia, Ontario, Canada

FIAT METAL MANUFACTURING CO.
9319 Belmont Avenue, Franklin Park, Ill.

Please send complete information on your complete line of shower equipment.

Name_____

Company_____

Address_____

City_____ State_____

Type of Business_____

Architect: Welton Becket, F.A.I.A. & Associates
General Contractor: Del E. Webb Construction Co.
Air Conditioning Contractor: F. B. Gardner Co.
Mechanical Contractor: Scott Co.

NEW CONCEPT OF HOTEL CONSTRUCTION known as total design integrates every element, from structural steel to the air conditioning system—Worthington air conditioning, of course.

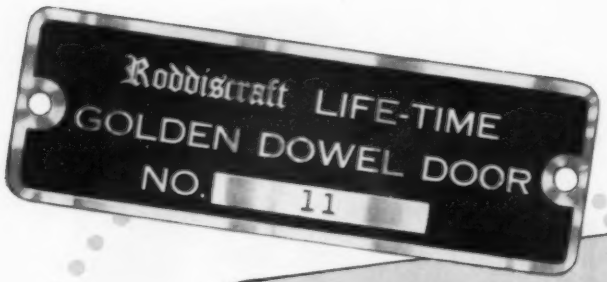
New Beverly Hilton air conditioned by Worthington

Each room in the magnificent new Beverly Hilton has its own *individually controlled* air conditioner, consisting of a fan and coil unit. These fan and coil units supply year-round heating and cooling.

The entire 1000-ton system was selected after rigid tests under supervision of architect Welton Becket's staff. A pair of Worthington 400-ton centrifugal compressors and two 100-ton Worthington Packaged Water Chillers provide refrigeration for the complete air conditioning system. Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.6.74-R Harrison, New Jersey. A674

WORTHINGTON

CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME



next time you see this serial plate, you'll be looking at . . .

the first all-wood solid core door guaranteed for the life of the installation

EVERY Roddiscraft Golden Dowel door wears a serial plate like the one shown here. It's the mark of a door with a registered "pedigree" — the first all-wood solid core door with a life-time guarantee. Backed by a policy with one of the world's major insurance companies, this guarantee indemnifies owners against loss for the life of the installation.

Significance to you

When you specify the "Golden Dowel," you're calling for the finest solid core door ever produced. You're specifying a door that measures up to your proudest designs — that protects your good name for years to come.

In building the "Golden Dowel," Roddiscraft makes use of all-wood construction . . . utilizes the stability of the staved core. That's just the beginning! To give the door its time-defying character, Roddiscraft applies the new and exclusive technique of TIME CONDITIONING. This process, result of extensive research, is a perfect example of Roddiscraft's scientific approach to the art of wood-working.

Significance to your clients

Quality doesn't cost — it pays! Your clients can't help but respond to the inherent benefits of a door that's guaranteed for the life of the installation.

They will appreciate the other Roddiscraft advantages, too. Safety, for example. The fire resistance of Roddiscraft solid core door construction has been proved in tests by independent laboratories. There's sound resistance, too. These doors "keep the peace" . . . develop an average sound transmission loss of 31 decibels.

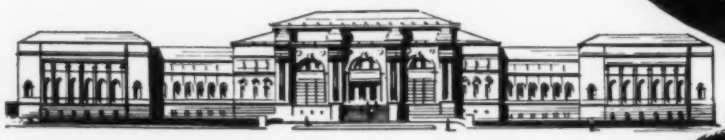
Write today for our door catalog. Also, find complete specifications in Sweet's. When in New York, visit the Roddiscraft Rockefeller Center Showroom, 620 Fifth Ave.

Roddiscraft

ONE SOURCE FOR ALL YOUR DOOR NEEDS

RODDIS PLYWOOD CORPORATION, Marshfield, Wisconsin • *Warehouses in principal cities*

"What a fortune under one ROOF!"



. . . an interview with the spirit of Rembrandt van Rijn, whose works of art are treasured and protected by the New York Metropolitan Museum of Art

Rembrandt? Well, well! We're honored to have you pay us a visit. What do you think of our *New* Amsterdam?

So different from my "old" one of 300 years ago! I can hardly believe my eyes at all the amazing things I have seen. Those sky-high buildings! Each one is a masterpiece in its own right!

Rembrandt . . . are you planning to look over your masterpieces at the New York Metropolitan Museum of Art? Many are worth about $500,000 today.

What a fortune! Hope the roof doesn't leak! I'd hate to think of any damage to my "Old Lady Cutting Her Nails" or the "Portrait of Hendrickje Stoffels."

Don't worry about the museum roof, Rembrandt. It's *very* safe now. But you would have worried back in the 1930's. The roof *did* leak then . . .

And how I did worry then! Particularly when I saw attendants placing pails around to catch drippings during rain storms. What in the world was wrong?

In a nutshell, Rembrandt, the old roof was made of a material that just couldn't stand up against the punishment of weather, winds, and corrosive atmospheres. So the museum authorities immediately started a search for a roofing material that *would* give masterpieces *permanent* protection. A search that led to just *one* material, Monel* Roofing Sheet.

*Registered Trademark

You see, Monel nickel-copper alloy has all the qualities a roof requires. Monel sheet is rustproof, strong, tough. It withstands the corrosive atmosphere of industrial and coastal areas. Its low coefficient of expansion and high endurance reduce the chance of fatigue failure. So, thanks to Monel sheet, Rembrandt, you don't have to worry about your masterpieces again.

Well, sir, no wonder the world is a better place to live in today . . . with metals like Monel Roofing Sheet available.

• • •

So figure on Monel Roofing Sheet when you take your base bids. If you would like assistance on specific jobs call on us at any time.

The International Nickel Company, Inc.
67 Wall Street New York 5, N. Y.

INCO Nickel Alloys

Monel Roofing . . . for the life of the building

another score for early planning with WAYNE rolling gymstands

A triumph of modern school design is the new Chambersburg (Pennsylvania) Area Senior High School planned by architects Ritchie Lawrie, Jr. and M. Edwin Green.

Early planning made the gymnasium of this new Chambersburg Area School as completely modern and efficient as the rest of the building.

Instead of choosing the gymnasium seating after the school was erected, Architects Lawrie and Green conferred with a Wayne Seating Engineer at the planning stage. Result: no costly errors that waste space and mar seating effectiveness.

Standard Wayne Gymstands were selected expertly with regard to location of windows, doors, pilasters, heating and ventilating units, folding partitions, sightlines and economy!

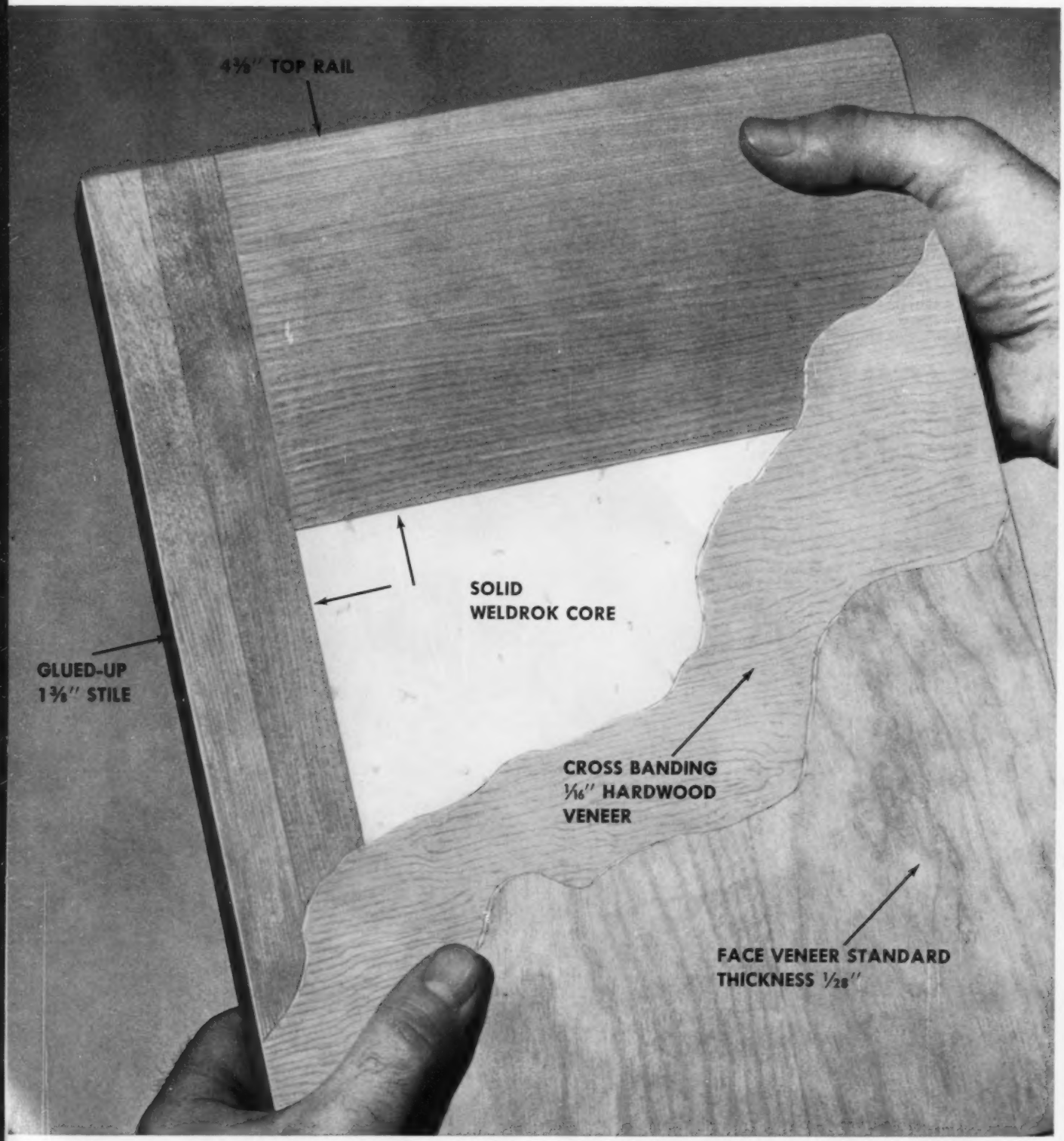
More and more of today's school planners recognize the value of early planning. Professional seating guidance helps them build more efficient, attractive gymnasiums. And Wayne's famous features — closed riser construction, straight-line opening and closing, carefully chosen and finished woodwork—assure them the best in gymnasium seating. If you're planning a new gym, plan early with Wayne!

HERE'S HELP FOR GYMNASIUM PLANNERS: Send for Wayne's Catalog R-55; it's full of helpful seating data.

WAYNE

Wayne Iron Works • 148 N. Pembroke Ave., Wayne, Pa.

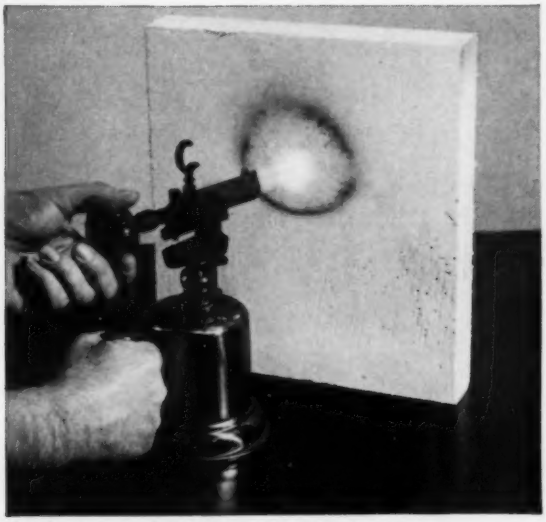
Weldrok Core



Weldrok® **mineral core** accounts for the superior performance and reputation of the Weldwood Stay-Strate Door. There just isn't a more soundly constructed, better performing door made—and it's competitive in price. Here is the Weldwood guarantee:

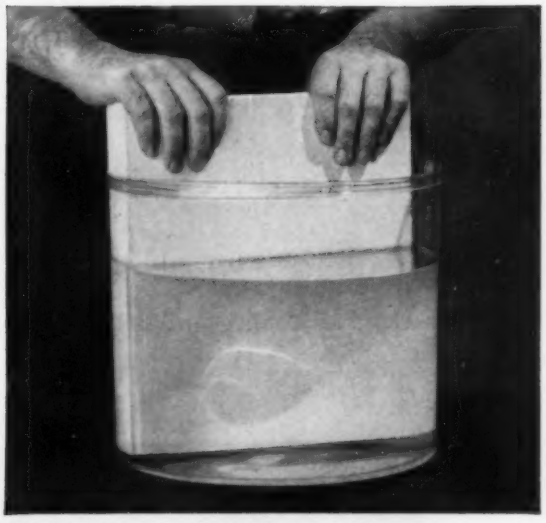
United States Plywood Corporation unconditionally guarantees, if properly installed, this Weldwood "Stay-Strate" Door against warping, twisting or manufacturing defects for the life of the installation. If any Weldwood "Stay-Strate" Door should fail to meet these standards, said door will be replaced without charge, including all labor costs of hanging and refinishing involved.

the big reason why Weldwood guarantees Stay-Strate Doors for life



Solid Weldrok core won't burn.

The Weldrok mineral core used in Stay-Strate Doors is incombustible and inert. It is the same core that is used in the famous Weldwood Fire Door, used for installations requiring fire-resistive openings. It is strong, extremely stable and light in weight (nominal density 20 pounds per cubic foot). It also provides greater insulation than the usual lumber core door.



Weldrok core is waterproof, won't warp or shrink.

It gives the Weldwood Stay-Strate Door maximum dimensional stability. Crossbands and faces are laminated to the core with 100% waterproof phenolic resin glue. A Weldwood Stay-Strate Door in operation for nearly 5 years, subjected to a relative humidity of 90-95% on one side and exposed to all the natural elements of the weather on the other, is still operating as perfectly as the day it was installed!

Weldrok core is a sound barrier. It hushes the sound of clacking typewriters in an office, helps control rumbling machinery in a plant, makes stores, homes, hotels and hospitals quieter, more pleasant. Weldwood's engineered construction combines the unusual properties of the Weldrok core with face veneers of some of the world's finest woods, such as oak, walnut, Korina® and birch. Doors are available 1¾" thick in many sizes; 1⅜" and 2¼" thicknesses on special order.

Famous Weldwood Fire Door* is same as Stay-Strate Door but with fireproofed edge bandings. Bears Underwriters' Laboratories label for Class "B" and "C" openings.

*U.S. Pat. No. 2593050

Sweet's

Weldwood®

STAY-STRATE® DOORS

A product of

UNITED STATES PLYWOOD CORPORATION

WELDWOOD—The Best Known Name in Plywood

87 branches in principal cities • *In Canada:* Weldwood Plywood, Ltd.

United States Plywood Corporation
Weldwood Building, 55 West 44th St., New York City 36, N. Y.

SEND ME full architectural details and specifications on Weldwood Stay-Strate Doors and Weldwood Fire Doors. **AR3-56**

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THE GREATEST ENGINEERING
ADVANCE IN POWER EXHAUSTERS
SINCE LOW CONTOUR DESIGN

NEW JENN-AIR

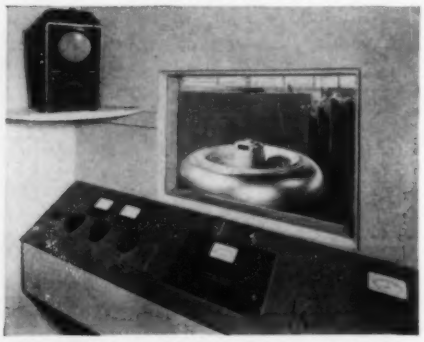
Quiet-tested

ROOF EXHAUSTER

WITH U-SPRING CUSHION
SUSPENSION MOUNTING

The new Quiet-Tested Roof Exhauster design carries out the same graceful low contour lines so popular in all Jenn-Air Aluminum Exhausters. U-Spring Cushion Suspension Mounting eliminates the transmission of vibration and motor hum to the base of the unit, thus achieving a quietness never before possible. Patents pending.

Jenn-Air Exhausters on production line moving up for testing. Every Unit is line-lab tested for vibration, sound, motor load and insulation break-down before leaving the plant.



Here is the Vibronic Eye test chamber along the production line. Through the window is shown a Quiet-Tested Exhauster which has just moved into position for testing. This final check eliminates the element of human error.

Here's a new "hush-hush" product that *isn't* being guarded against discovery . . . in fact, Jenn-Air unwraps its exclusive Quiet-Tested Roof Exhauster for all to see . . . *NOW*. It is hailed as the most significant engineering advance in power exhausters since low contour design—a Jenn-Air First. Now, for the first time, a power exhauster is offered that's truly quiet.

U-Spring Cushion Suspension Mounting Cuts Vibration—Lowers Noise Level

A new principle of power assembly mounting is introduced in this new Jenn-Air Exhauster. U-springs suspend the power unit so it is cushioned against vibration . . . an exclusive Jenn-Air feature. New design in fan blade and housing reduces air velocity. In addition to the usual dynamic and static blade balance, a further critical test is made . . . the motor and blade are balanced together . . . another Jenn-Air exclusive. *All this adds up to the lowest noise level ever achieved in power exhausters.*

Every Quiet-Tested Exhauster Individually Checked by Exclusive VIBRONIC EYE

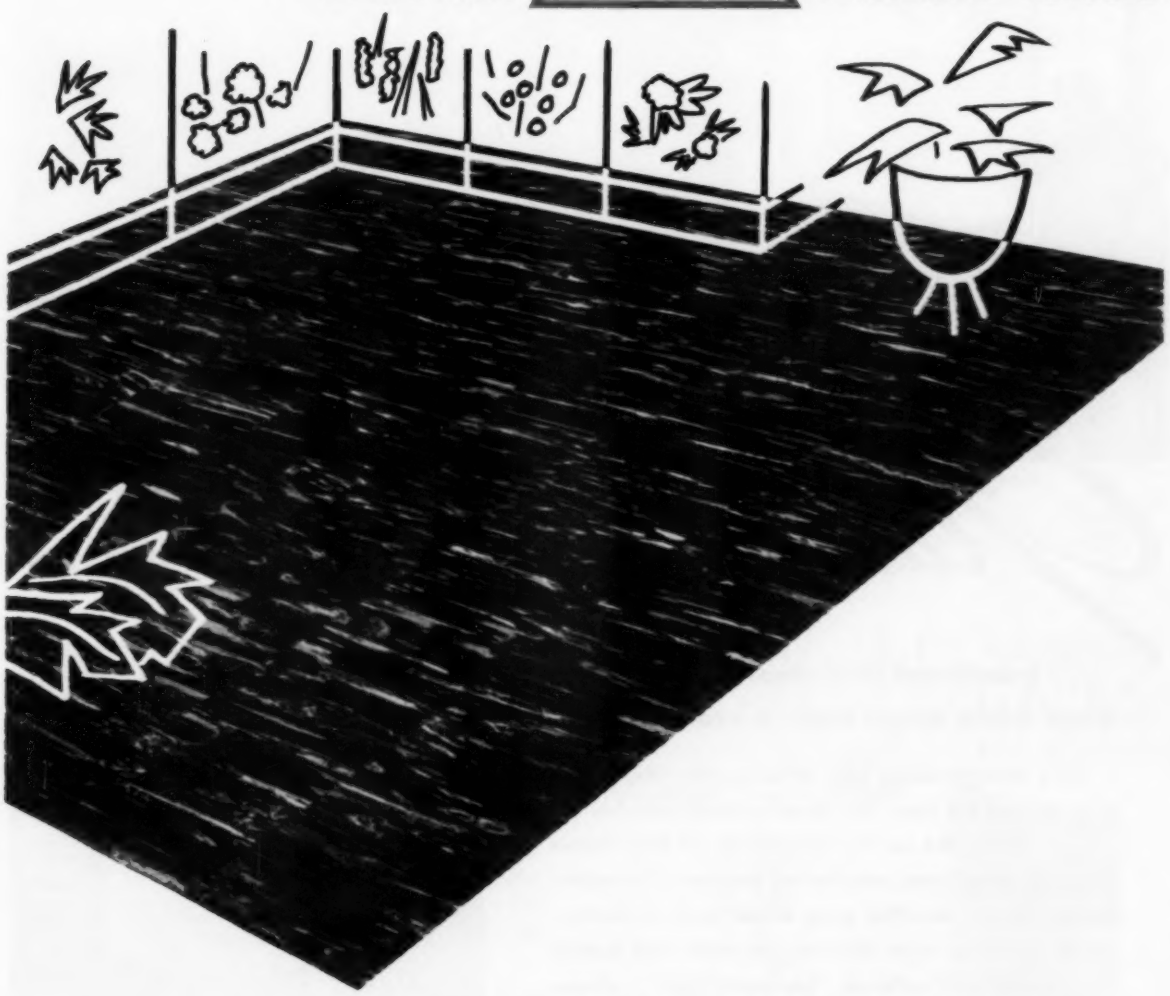
Every Quiet-Tested Unit is individually checked under simulated operating conditions by the exclusive Vibronic Eye in a sound control room. It works this way. First, a standard of acceptable quietness is established . . . then the Vibronic Eye tests every exhauster for vibration and noise. A further test is made for motor load and insulation break-down. Those are examples of the ceaseless search to improve products by Jenn-Air. So, look to Jenn-Air for better engineered exhausters—designed and line tested to perform beyond any in the field.

"Ratings in accordance with standard test code by the Texas Experiment Station"—determined in accordance with procedures as set forth by NAFM and ASH&VE.

JENN-AIR PRODUCTS CO., INC.
1102 Stadium Drive
Indianapolis 7, Indiana

Say it with floors

. . colorful AZPHLEX® marble tones



Where beauty is on sale, back it up with a selling *floor*. Azphlex Marble Tones, in light, clear colors . . in fresh, interesting design combinations make a perfect display floor for product or service sales.

This new and better flooring is *vinylized* to give it extra stamina to withstand extra traffic and wear . . to resist spilled or tracked-in greases and oils. It also means a smoother, tighter surface that's easy to clean, economical to maintain. Azphlex Vinylized Tile costs a bit more than asphalt tile, gives much more beauty and service. Discover the decorative possibilities in Azphlex . . write for samples, color chart and complete information.

Pattern shown: Charcoal

AZROCK FLOORING PRODUCTS

AZROCK PRODUCTS DIVISION • UVALDE ROCK ASPHALT CO.

562 Frost Bank Building • San Antonio, Texas • *Makers of* Vina-Lux • Azrock • Duraco • Azphlex

Structural Corrugated glass partitions in offices of Davis Press, Inc., Worcester, Mass.

Glass DIVIDES A ROOM WITHOUT GLOOM

Translucent Mississippi Pattern Keeps Small Office Bright With "Borrowed" Light

Note how attractive, light diffusing, Mississippi Glass partitions this room into cheerful, bright cubicles, yet avoids the cell-like atmosphere of conventional materials. Employees work better, see better in modern surroundings of beautiful glass whose rhythmic patterns never go out of style. Interiors are bright with copious quantities of softened, "borrowed light"... always look new with these practical walls that never require painting, wipe shining clean with a damp cloth, can always be moved for future needs.

In your new building and remodeling projects, specify Mississippi Glass. Available in a wide variety of patterns at distributors of quality glass everywhere.

Unique installation of Mississippi Structural Corrugated glass. Photo courtesy Hauserman Company.

Write today for free literature. Address Dept. 7.

MISSISSIPPI *Glass* COMPANY

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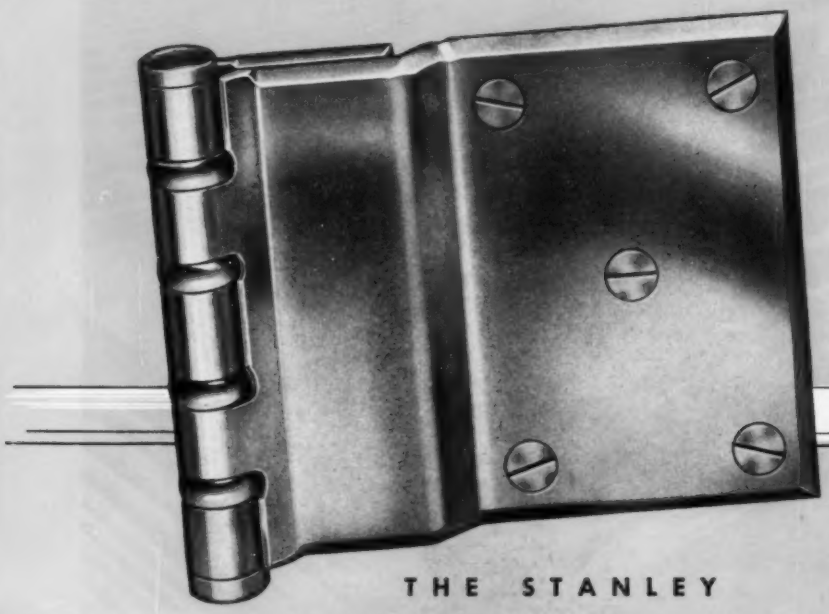
Sweet's

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

A hinge designed for hospitals



This hinge swings door clear of opening—allows full use of framed space.

THE STANLEY

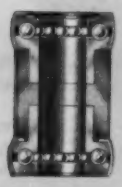
SWING-CLEAR HINGE

APPLICATION

In patients' rooms, operating rooms, emergency rooms . . . wherever traffic necessitates a completely clear opening.

CONSTRUCTION

Extra heavy, cold rolled wrought steel. Standard finishes, or bonderized and prime coated. Four *Full Jeweled* ball bearings on each hinge.

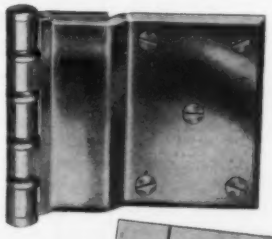


STANLEY FULL JEWELED® BALL BEARINGS

Door load is carried on fully enclosed, permanently lubricated ball bearings. These radial thrust bearings eliminate lateral as well as vertical wear.

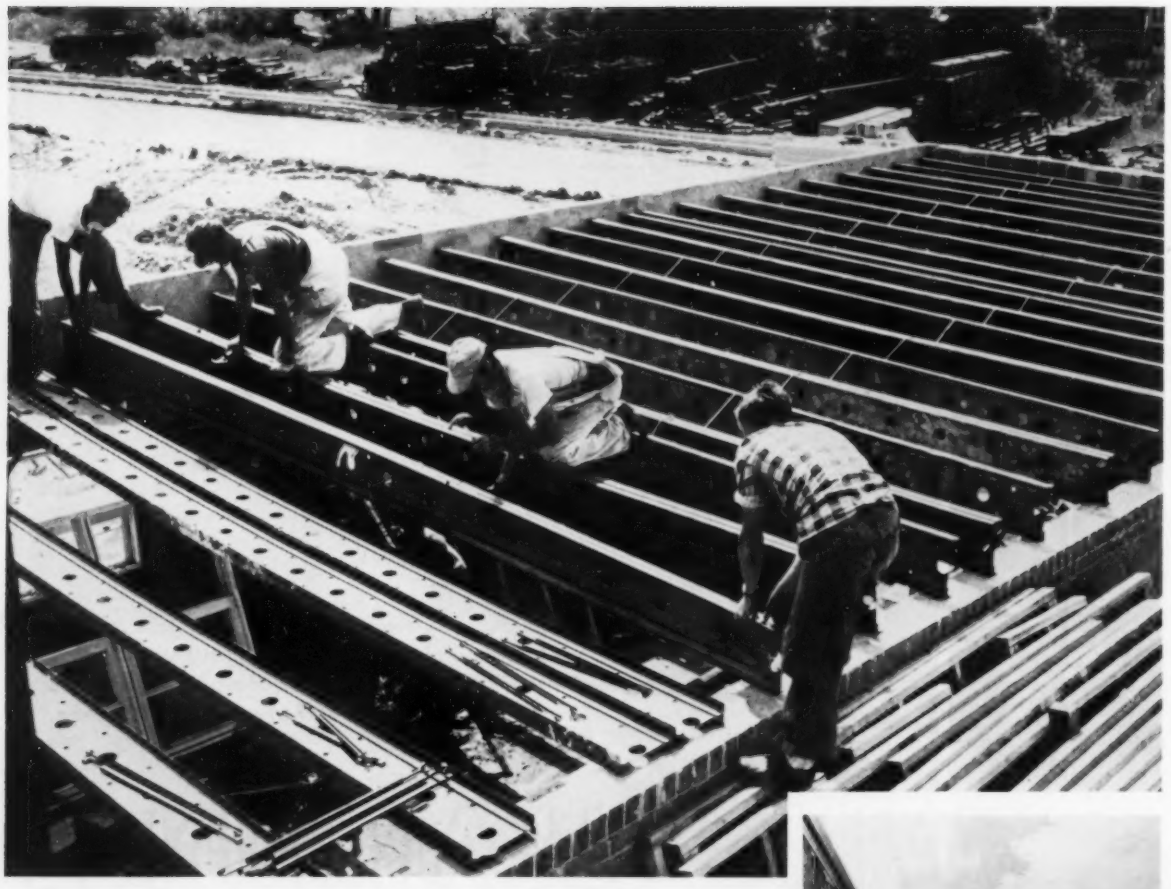
HALF MORTISE SWING-CLEAR HINGE

FULL SURFACE SWING-CLEAR HINGE



Write for your free copy of "Stanley Hospital Hardware" H-75. Complete with illustrations and technical data.

STANLEY



Architects: Corning & Moore
Structural Engineer: Milton Kellert

LIGHTSTEEL FLOOR SYSTEM cuts 55% from insurance rates for apartment development

Fireproof construction offered twin advantages for the owners of the Shirley Park apartment development, Arlington, Virginia. It could mean big annual savings in the cost of insurance, and obvious rental benefits.

A problem was the type of floor system to use. Wood joists were out. Their initial cost was right but they did not qualify for the lowest insurance rates. The only possibility was a system utilizing steel and concrete – but economically.

Penmetal's LIGHTSTEEL floor-joist system did the trick. It afforded all the advantages of conventional steel joists, but without the waste and high costs of overdesign. Insurance rates were 55% lower than a system using wood. *In 13 years, insurance savings alone will pay off the small added cost of* LIGHTSTEEL.

And the owners saved in construction, too. Economies included: speed of erection, availability of materials, and light weight which eliminated the need for heavy erection equipment. The job superintendent's records show that an entire floor-joist system for one apartment building (area 75′ x 38′) was erected in two hours by four men.

M. T. Broyhill & Sons Corporation of Arlington, builders, owners, and operators of these ultra-modern apartments, feels that the LIGHTSTEEL system is the most economical for apartments, as well as for commercial and institutional buildings.

Architects: Here is a place you can design for real savings. For further information, send for catalog and technical manual.

PENN METAL COMPANY, INC.
General Sales Office: 205 East 42nd Street
New York 17, N. Y.
Plant: Parkersburg, W. Va.
District Sales Offices: Boston, New York, Atlanta, Philadelphia, Pittsburgh, Charlotte, Chicago, Detroit, St. Louis, Minneapolis, Denver, Dallas, Little Rock, Seattle, San Francisco, Los Angeles, Parkersburg

METAL MARK Penmetal 1869 OF QUALITY

PM-95

AIR CONDITIONED!

it's cool inside

GUTH

PEERLITE

Trademark

Permits flexible pattern planning. You can form any design you wish.
For 2, 3, or 4 lamps—4′ or 8′ long.

more cooling less cleaning

Wide open on top and bottom for brisk air-circulation

Cool lamps last longer.
Clean lamps stay brighter.
Clean fixtures give more light!

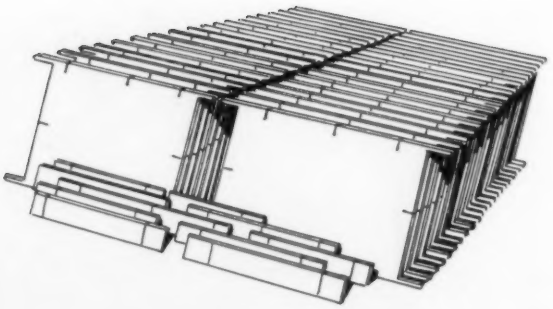
RESULT: greater efficiency
less maintenance
long-lasting beauty

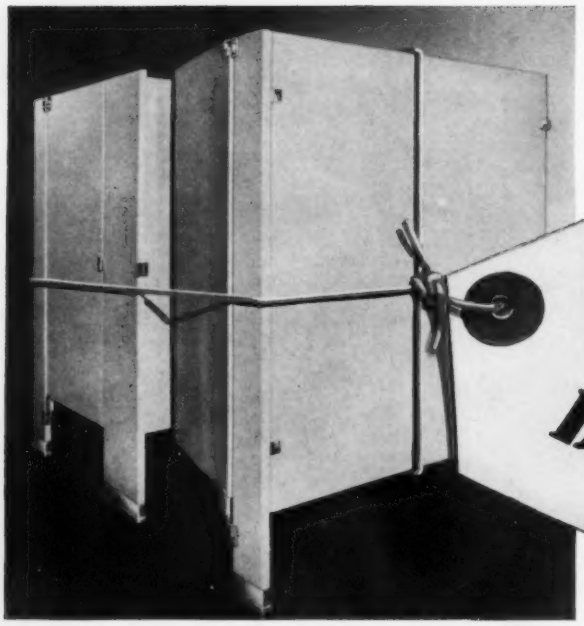
*U. S. & Can. Pats. Pend.
Trademark registered

Write on your letterhead today for Catalog 911-J.

THE EDWIN F. GUTH COMPANY ST. LOUIS 3, MO.

Leaders in Lighting since 1902





Right from stock . . .

in standard colors

for QUICK DELIVERY

Specify right from this new Nicholson "tell all" bulletin!

Contains complete specifications, illustrations, and engineering drawings on facilities, construction, styles, layouts, and hardware. Send for a copy today!

. . . Nicholson's complete line of toilet compartments are stocked in standard styles and sizes for fast "from stock" delivery.

You can specify better-built compartments—Nicholson compartments—and have them shipped *right away!* No hold-up. No waiting. No delay in completion of important building contracts.

Latest production facilities, housed in a modern 67,000 square-foot plant, are busy building up a standard-size stock of three distinctive styles. From ultra-modern to rugged utility designs, you can get the toilet compartments you need *in a hurry.*

For serviceability and *service,* specify Nicholson.

Nicholson Toilet Compartments are immediately available in the following types . . . in standard colors:

Type A—floor braced Type AR—overhead braced
Type B—flush type

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The new ADVANCE Buyer's Guide, the Cross-reference Fluorescent Lamp Ballast Replacement Chart together with the brochure listing authorized ADVANCE Service-Stocking Distributors will be sent to you without cost or obligation. Write today!

This ADVANCE Fluorescent Lamp Ballast Servicing Plan has been established to save time and money for electrical contractors, lighting equipment manufacturers, engineers, electric utilities, architects and users of fluorescent lighting equipment. To serve you in this program ADVANCE, the world's largest exclusive ballast manufacturer, has appointed a nationwide network of service-stocking distributors. These authorized distributors carry a complete stock of ADVANCE ballasts and will replace, WITHOUT CHARGE, any ADVANCE ballast which becomes inoperative within the two-year warranty period. Also, from this ADVANCE stock, which includes ballasts to operate all fluorescent lamps, they offer immediate replacement service for any other make ballast.

The ADVANCE label is your assurance of dependable, efficient performance at lowest cost . . . the result of years of engineering and development that have made ADVANCE fluorescent lamp ballasts "The Heart of The Lighting Industry".

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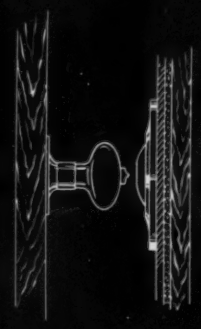

No. 3507

FOR Cylindrical Lock Sets....

A new 4" wall bumper made for cylindrical lock sets with inside set buttons. Set button enters recess in grey rubber. Body of knob takes shock. Furnished in all natural and plated finishes with wood screws, or toggle bolts.

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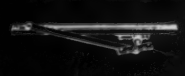

SASH & DOOR

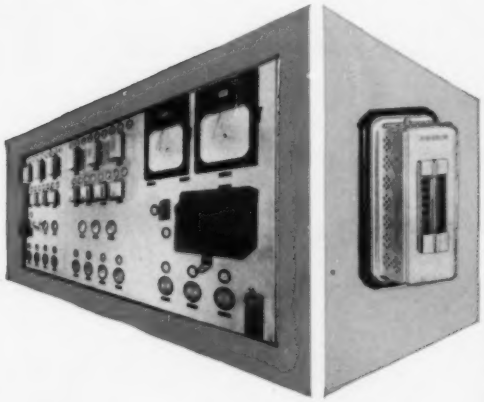
Bristol School, Webster Groves, Missouri, where Ceco-Sterling Aluminum Projected Windows were used. Architects: Hellmuth

another outstanding

"HEAT PUMP" INSTALLATION

with

JOHNSON CONTROL



In one of the first applications of its kind, a complete heat pump system is combined with radiant panel heating and cooling as well as central fan air conditioning

By any standard, Albuquerque's new Simms Building* is an outstanding example of distinctive design and high functional efficiency. Equally impressive are the building's mechanical facilities, which include a reverse cycle "heat pump" combined with a radiant panel heating and cooling system and six central fan systems for heating, cooling and ventilation.

The successful operation of this modern air conditioning installation requires a control system capable of solving a constantly varying array of intricate control problems. For example, the control system must compensate automatically for the effects of solar heat gain and, even when outdoor temperatures are below 20° F, provide for simultaneous heating and cooling in different sections of the building.

The control system must regulate the radiant panel system and the central fan units to produce uniformly ideal temperatures throughout the entire building.

And it must operate the "heat pump" in perfect coordination with the demands of the radiant panels and the fan systems. Completely automatic changeover between the heating, cooling and intermediate cycles of operation is essential. Refrigeration capacity, at less than design load, must be limited to minimize operating costs. Admission and discharge of well water must be accurately controlled.

A specially engineered system of Johnson Control solves all of these and countless other control problems successfully, providing the Simms Building with uninterrupted comfort and virtually waste-free heating and cooling performance.

The superior comfort and economy features of Johnson Control can be applied to any building, regardless of its type or size. Whether your particular temperature regulation problems demand this kind of intricate control system or a very simple arrangement of thermostats and valves or dampers, look to Johnson for the best solution. A nearby Johnson engineer will gladly make recommendations without obligation. Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

*Simms Building, Albuquerque, N. M. Flatow & Moore, architects; Bridgers & Paxton, mechanical engineers; all of Albuquerque.

JOHNSON CONTROL

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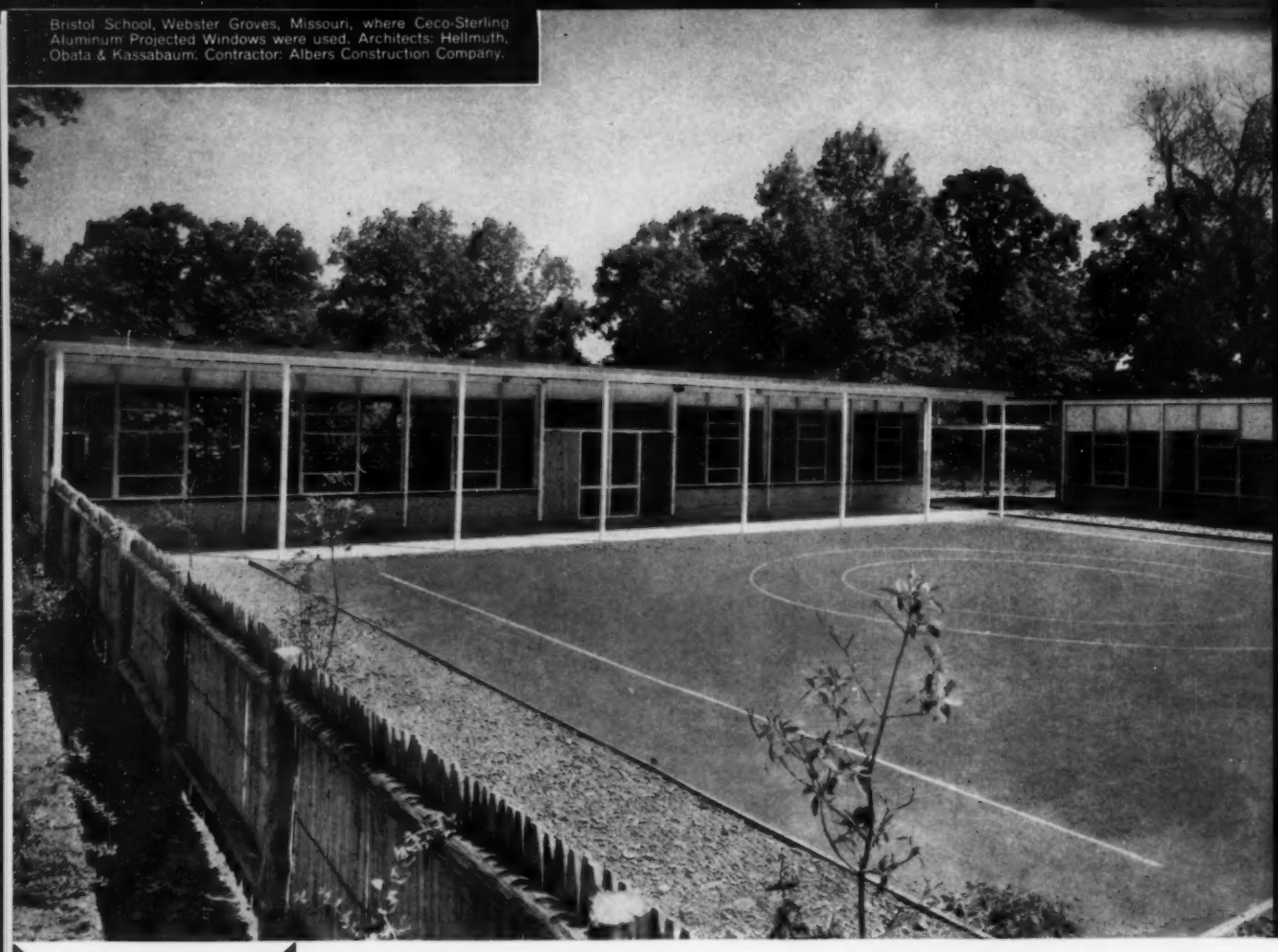

Bristol School, Webster Groves, Missouri, where Ceco-Sterling Aluminum Projected Windows were used. Architects: Hellmuth, Obata & Kassabaum. Contractor: Albers Construction Company.

Windows of quiet beauty complement an award-winning

Ceco-Sterling Aluminum Projected Windows with Tubular Vertical Mullions Achieve Narrow Sight-Lines... Afford Maximum Daylighting... Reduce Maintenance Costs

It's a combination of many things—some aesthetic —some functional—that determines the winner of a top award in a national school competition. So it was with the Bristol School, Webster Groves, Missouri, which received an award of merit from the American Association of School Administrators. The aim of architects Hellmuth, Obata & Kassabaum was to create an attractive environment centered around the physical and psychological needs of young children. Much thought was given the site and building position. Good illumination came in for careful study, and here Ceco-Sterling Aluminum Projected Windows were used for maximum daylighting. Ceco engineers worked closely with the architects in developing a tubular vertical mullion to achieve an extra narrow sight-line. The clean, neutral tones of aluminum windows combined pleasingly with gay colored panels in the entrance. All in all, the windows complemented the architectural concept. Since aluminum never needs painting, maintenance savings were assured. So—on your next project, consider Ceco's broad line of windows. They offer the variety and craftsmanship to meet your window requirements.

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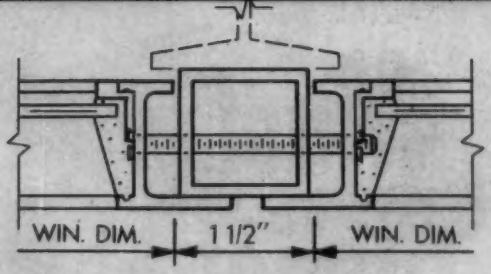
IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Striking effect of narrow mullions on vertical sight-line is illustrated in this view showing the entrance canopy and primary classroom wing of Bristol School.

school . . .



Mullions, being only 1½" wide instead of the usual 2¼", do not compete with the sight-lines established by the building's 10-foot module design.

The neutral tone of Ceco-Sterling Aluminum Windows blends with panels of red, blue and yellow to provide a striking entrance for the Bristol School.

Ceco-Sterling Aluminum Projected Windows are especially suitable for schools. Ventilators have two-point contact, assuring tightest weatherseal. Handsome hardware is designed in keeping with modern, functional thinking.

All season sensation!

NEW Mueller Climatrol recessed room air conditioner

HEATS
with steam or hot water in commercial and institutional buildings.

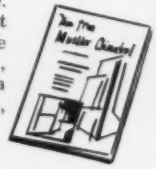
COOLS
with its own air-cooled, one-hp refrigeration cycle.

SAVES
up to 50% on installation . . . 20% on operating costs.

EVERY room with its own thermostat-controlled heating-cooling system! New Mueller Climatrol recessed air conditioner is compact, attractive, conceals ugly piping . . . heats, cools and dehumidifies . . . ventilates with fresh outdoor air . . . exhausts stale air. Windows can be kept locked and sealed, preventing entrance of "downtown dirt."

No water — a boon in areas where water cannot be used for air conditioning. Efficient one-hp refrigeration cycle is air-cooled . . . requires no plumbing or drainage.

Of course, you'll want full details. Write Mueller Climatrol, 2058 W. Oklahoma Ave., Milwaukee 15, Wisconsin. Dept. 36

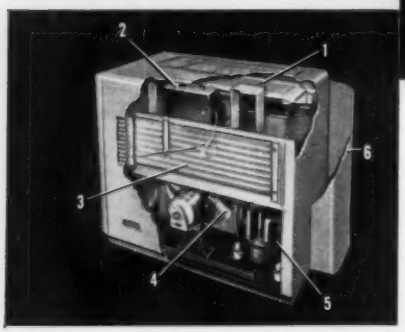


Mueller Climatrol

compact inside

. . . flush outside

. . . quality-built throughout



1. Hot water or steam coil provides even heat, gently circulated by big-twin centrifugal blowers for perfect comfort.

2. Individual room temperature control is easy with push-button selector. Heating-cooling thermostat provides uniform comfort.

3. Full-width cooling coil has extra capacity for even air distribution, ample dehumidification.

4. Propeller fan exhausts heat from condenser coil and dissipates condensate . . . can be used to exhaust stale room air.

5. Entire one-hp refrigeration cycle mounted on easy-to-remove frame. No need to disturb heating coils or piping to remove cycle for service.

6. Chases completely conceal supply and return pipes, valves, etc.; make attractive installation.

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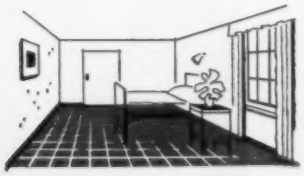

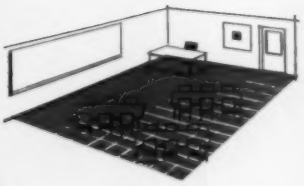

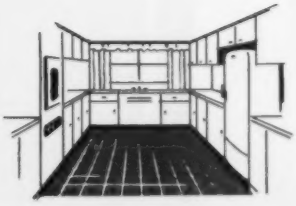

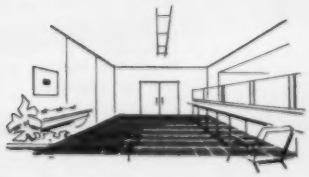

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STAYS BEAUTIFUL LONGER,
. . . with or without waxing

Specifying floor covering can be touchy business . . . you can save, but be sorry! With the high percentage of vinyl in Bolta-Floor, you're sure of a more dense surface for greater wearability, easier maintenance as well as a rich natural lustre that lasts years longer, with or without waxing.

Bolta-Floor offers a full line in colors, sizes and gauges to meet every requirement. It's available in 22 smart decorator colors . . . 5 solid and 17 marbleized, in 4 tile sizes (6 x 6, 9 x 9, 12 x 12, 18 x 18), 2 roll widths (27″ and 54″) and in 3 gauges (1/8″, 3/32″ and .080).

For top quality and performance, specify Bolta-Floor and be sure.

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About Practical Heat Exchange

There is a competent Aerofin heat-transfer engineer near you—qualified by intensive training and long experience to find the *right* answer to your own particular heat-exchange problem—and backed by the research and production facilities of the pioneers in light-weight extended surface.

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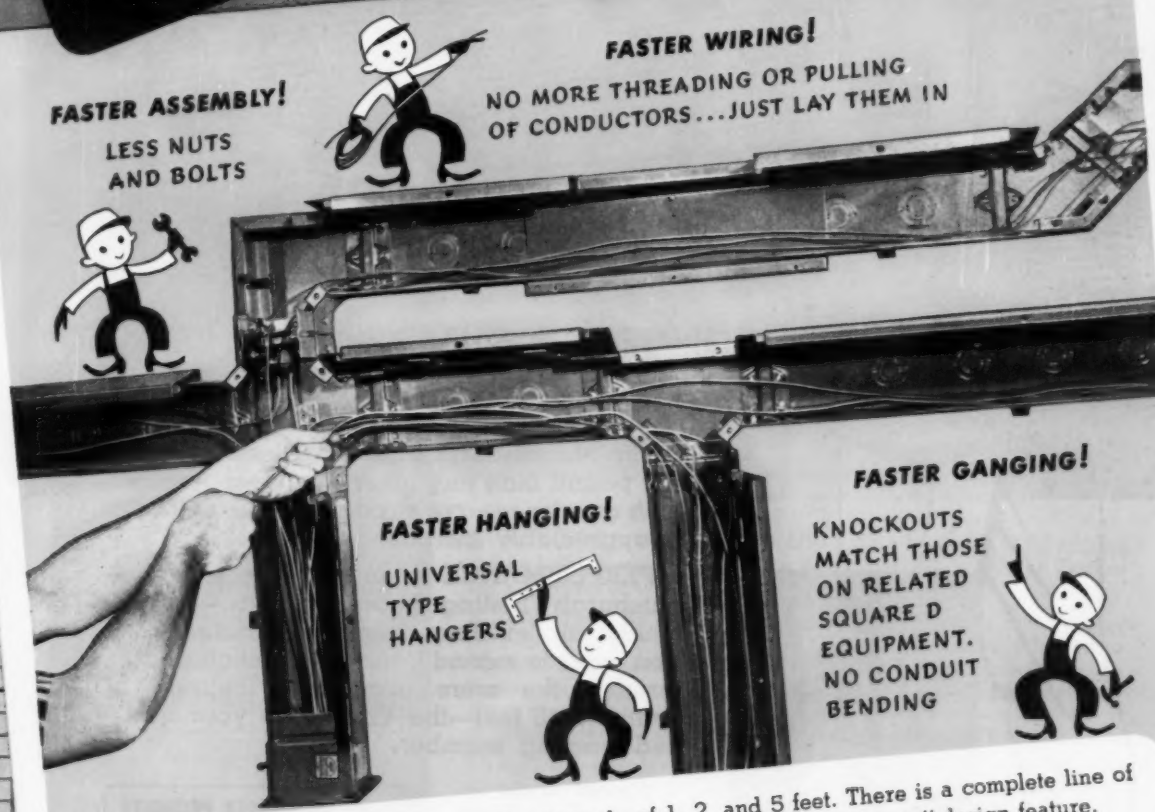
SQUARE D's NEW AND EXCLUSIVE *Lay-in Duct*


FASTER ASSEMBLY!
LESS NUTS AND BOLTS
FASTER WIRING!
NO MORE THREADING OR PULLING OF CONDUCTORS...JUST LAY THEM IN
FASTER HANGING!
UNIVERSAL TYPE HANGERS
FASTER GANGING!
KNOCKOUTS MATCH THOSE ON RELATED SQUARE D EQUIPMENT. NO CONDUIT BENDING

Square D's exclusive design provides hinged covers for both the duct sections and connectors. Easily removable fitting covers then provide a completely unobstructed wireway in which to lay wires.

LAY-IN DUCT is available in 2½" x 2½", 4" x 4", and 6" x 6" sizes, in standard lengths of 1, 2, and 5 feet. There is a complete line of fittings, all with the "lay-in" design feature.

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Write for the complete story of **LAY-IN DUCT**—how it gives you a better wireway system, easier, faster and at less cost. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

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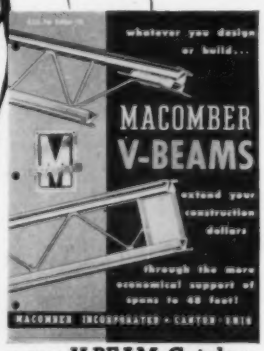
AN ENGINEER'S PRODUCT

The Macomber V-BEAM carries more load per pound than any other structural member, with greater reserve strength. Lateral rigidity is appreciably increased.

PERFORMANCE — proved by extensive Pittsburgh Testing Laborator tests — transcends all existing framing standards. If you want to extend your construction dollars through the more economical support of spans to 48 feet—the V-BEAM is your qualified framing member.


whatever you design or build...
MACOMBER
V-BEAMS
extend your construction dollars
through the more economical support of spans to 48 feet!
MACOMBER INCORPORATED • CANTON • OHIO

Send for your V-BEAM Catalog.

Shown above: Country Fair Shopping Center, Zanesville, Ohio. Don M. Castro and Don M. Castro, Jr., Developers. C. Melvin Frank, A.I.A. Architect.

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Contractors will recognize the extra value their money buys.

STANDARDIZED STEEL BUILDING PRODUCTS

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NAILABLE STEEL JOISTS
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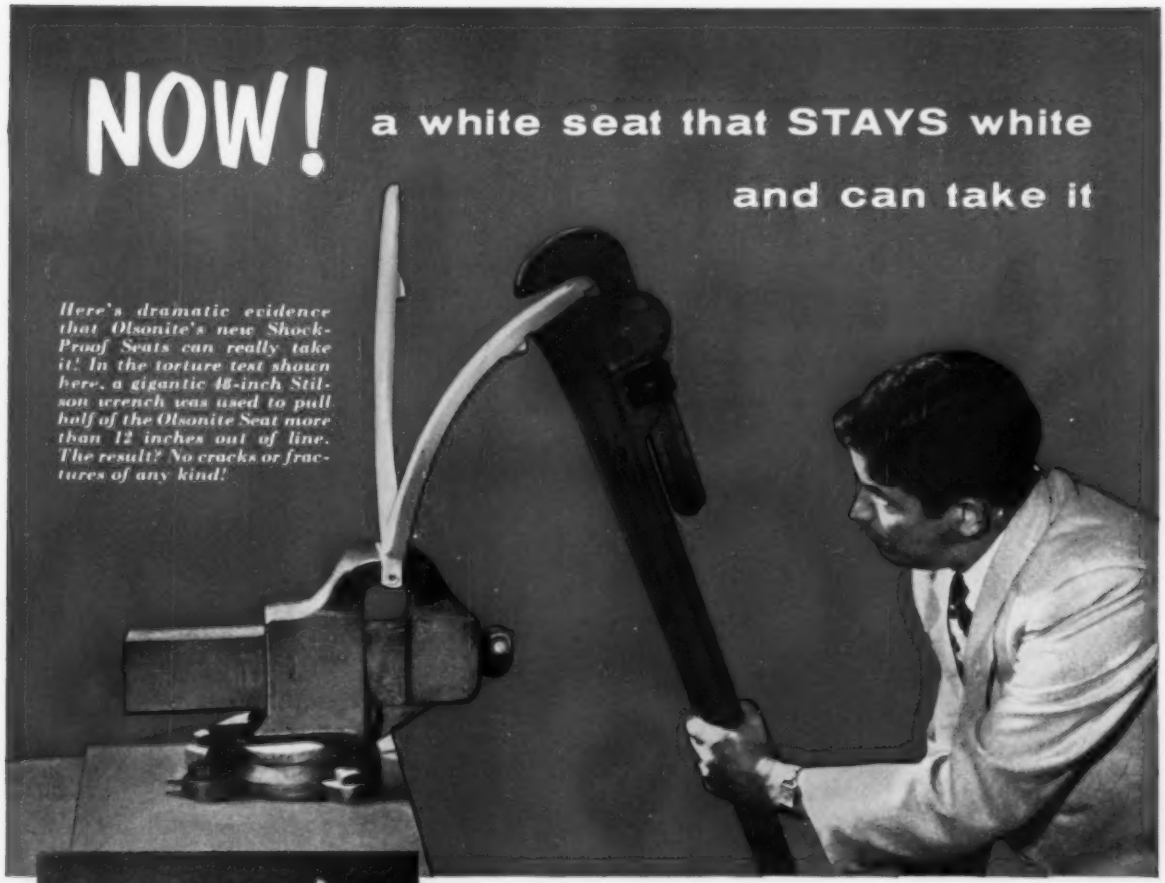
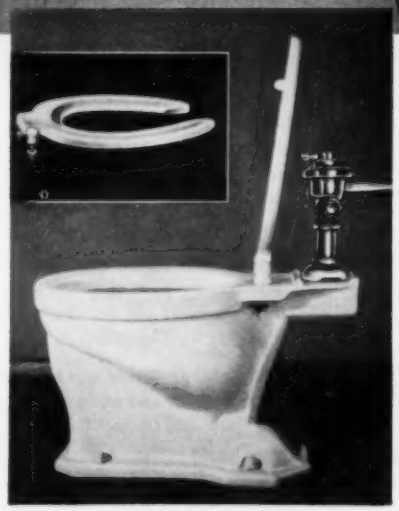
NOW! a white seat that STAYS white and can take it



Here's dramatic evidence that Olsonite's new Shock-Proof Seats can really take it! In the torture test shown here, a gigantic 48-inch Stillson wrench was used to pull half of the Olsonite Seat more than 12 inches out of line. The result? No cracks or fractures of any kind!



In addition to the regular bowl model (#5) and elongated bowl (#10), the amazing new Olsonite Shock-Proof industrial and commercial seats are available with a concealed check hinge (#5CC and #10CC) made entirely of non-corrosive metal. A lug on the hinge posts locks against cutaway on insert in extended seat back, preventing the seat from being raised to more than 11° beyond perpendicular.

A-4

NOW YOU CAN SPECIFY WHITE SEATS for all industrial and public toilet installations—white seats that won't fade or "yellow" for a lifetime of normal use!

With the new Olsonite White Shock-Proof Seats, it's easier to keep that clean, sanitary appearance than with black seats. Shock-Proof Olsonite Seats have also proven their ability to withstand shocks 5 times greater than ordinary solid one-piece seats. Even deliberate abuse in public toilets and industrial installations won't crack, chip or break Olsonite Shock-Proof Seats—and they won't absorb water.

Like all Olsonite Seats, Shock-Proof models are solid one-piece construction—there is no applied finish to crack or peel. They are sanitary white *all the way through*. Be sure to specify the seat that *stays white*—the seat that can "take it" without damage for a lifetime of normal use—Solid Olsonite Shock-Proof Seats.

Olsonite's complete catalog is available on request. Please write on your letterhead to:

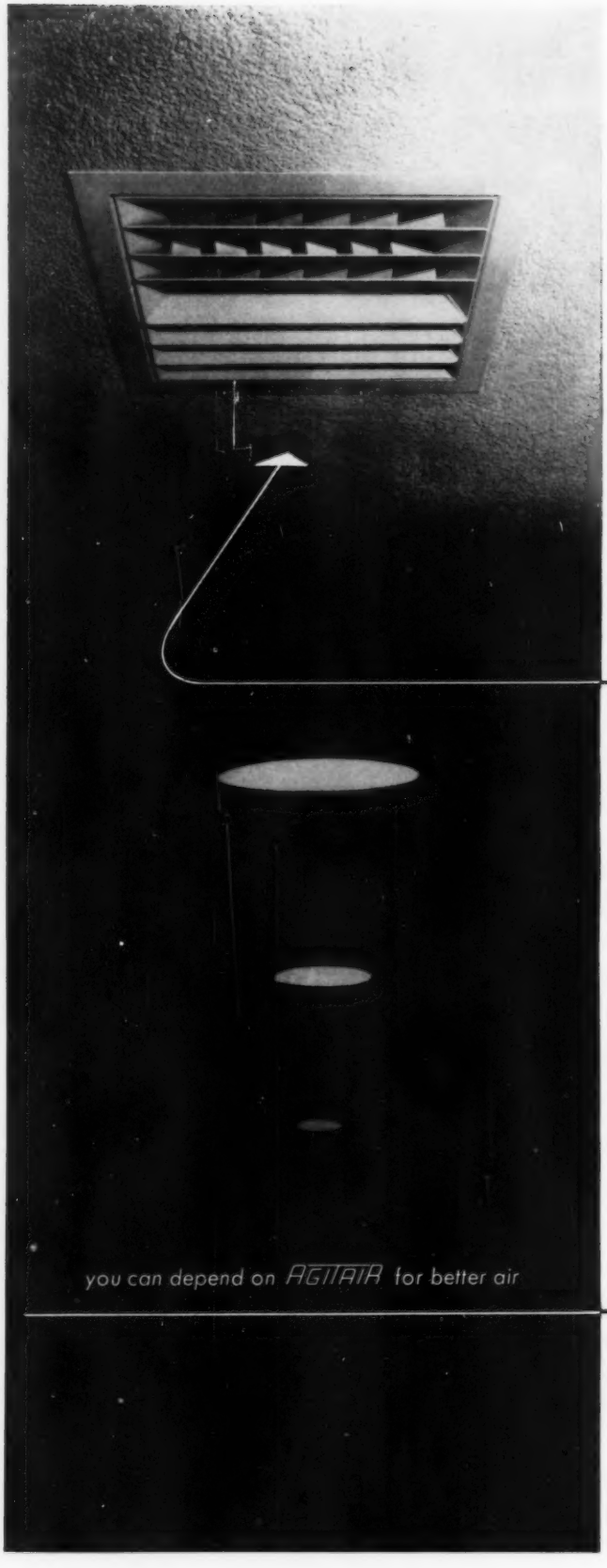
SOLID Olsonite SEATS

ORIGINATORS OF THE SOLID PLASTIC SEAT

Olsonite Shock-Proof Models Are Available In White or Black

SWEDISH CRUCIBLE STEEL COMPANY

Plastics Division, 8561 Butler Avenue, Detroit 11, Michigan



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You would expect Formica surfaces to be at home in these surroundings and they are in huge areas. Typical are the restaurants along the entire length of the New York Thruway.

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DEMAND THIS CERTIFICATION

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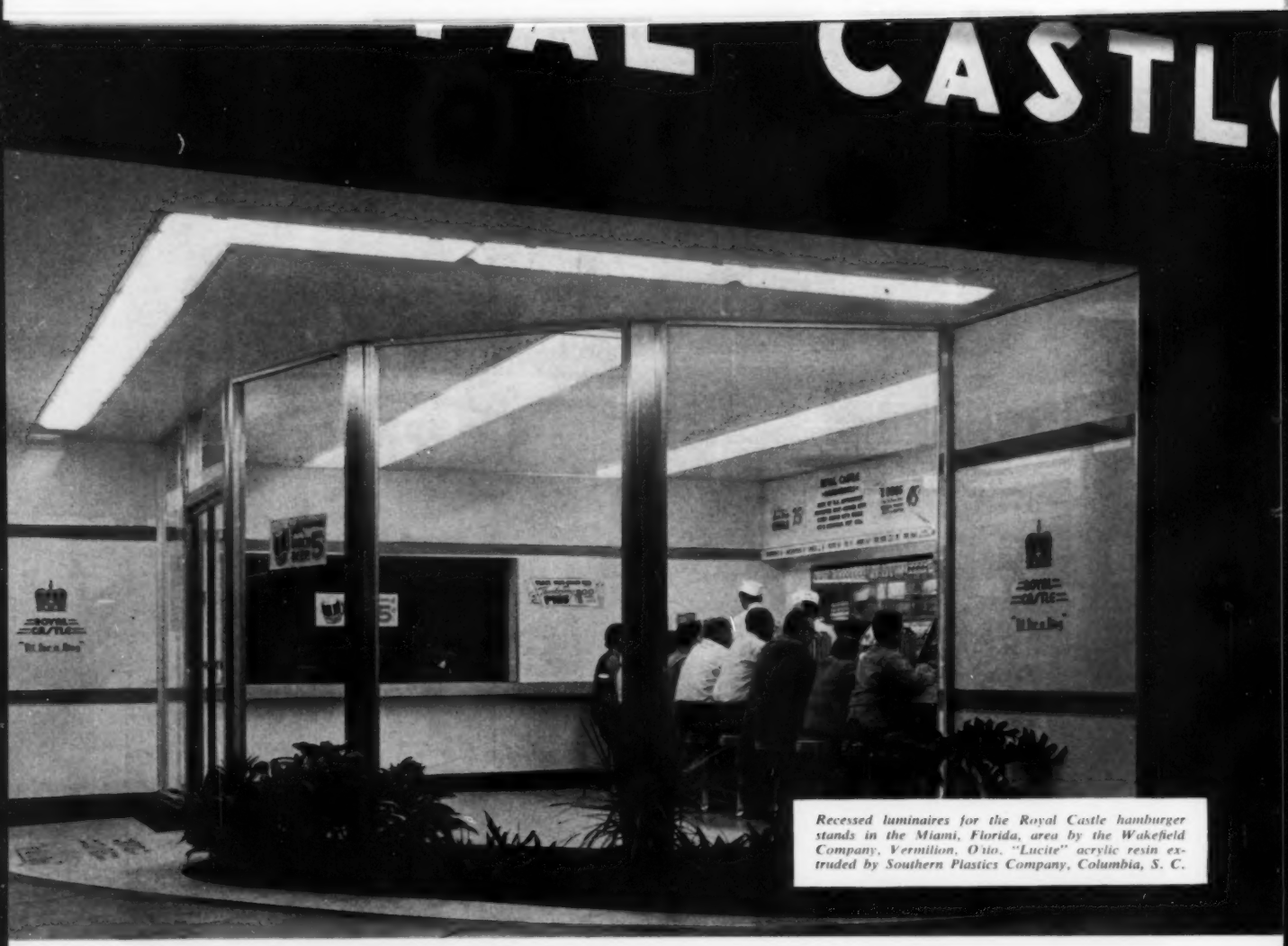
Seeing is believing. If this wash-off identification is not on the surface, it's not FORMICA.



Recessed luminaires for the Royal Castle hamburger stands in the Miami, Florida, area by the Wakefield Company, Vermilion, Ohio. "Lucite" acrylic resin extruded by Southern Plastics Company, Columbia, S. C.

Better looking, better lighting.

with diffusing panels of Du Pont LUCITE®

Everything possible was done to make the recently constructed Royal Castle hamburger stands truly spots "fit for a king." This called for a happy blending of operating efficiency and beauty.

When it came to lighting, the selection was an obvious one . . . the "Castles" get appealing lighting both indoors and out with diffusing panels of extruded "Lucite."

Diffusing panels of "Lucite" acrylic resin transmit optimum light without specular glare or shadow. They are strong, durable, free from discoloration, and dimensionally stable. Installation is a simple matter. Panels of "Lucite" are light in weight and easy to handle . . . maintain their clarity and beauty.

Du Pont "Lucite" can be formed readily into desired shapes and is available in a wide range of transparent and translucent colors.

Send for free, new booklet. This new 12-page illustrated booklet describes all the latest property and application data on "Lucite" acrylic resin for lighting. For your free copy, write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Dept., Room 733, Du Pont Building, Wilmington 98, Delaware.

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This "Quality Controlled" label may be used only by qualified extruders of Du Pont "Lucite" acrylic resin. It assures the lighting industry that the extruded material conforms to standards for low shrinkage and uniform caliper established by E. I. du Pont de Nemours & Co. (Inc.).

Quality Controlled

strong

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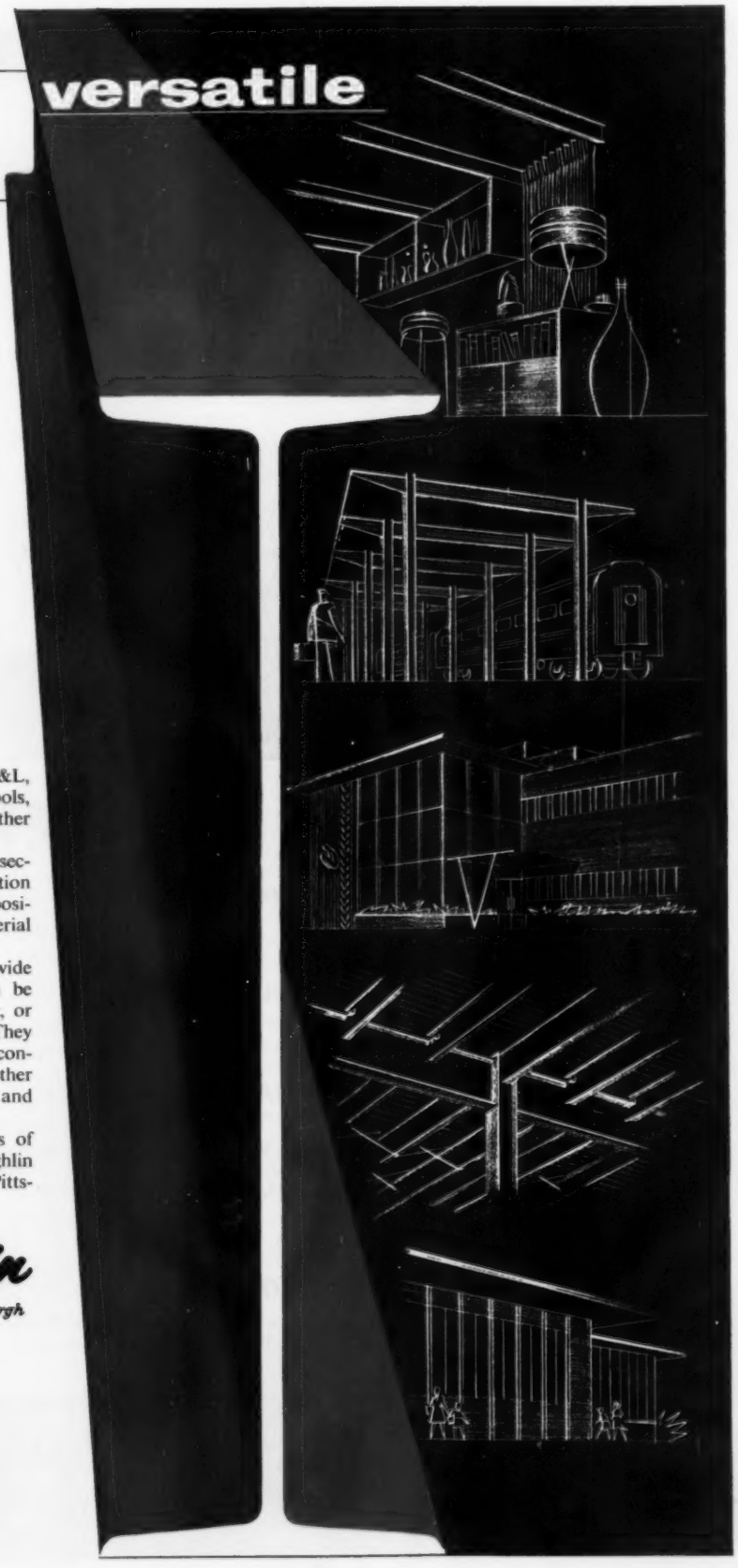
Lightweight

J&L JUNIOR BEAMS



Junior Beams, produced exclusively by J&L, can help you cut building costs in schools, apartment buildings, warehouses and other light occupancy structures.

The lightest hot rolled structural steel section available, Junior Beams speed erection because they can be easily raised and positioned with minimum manpower and material handling equipment.

Junior Beams may be adapted to a wide range of architectural design. They can be framed-in, used as a continuous member, or cantilevered beyond supporting walls. They are not only suitable for floor and roof construction but can be used for numerous other applications such as shipbuilding, truck and trailer frames and grandstands.

For complete information on the uses of J&L Junior Beams, write Jones & Laughlin Steel Corporation, 491 Gateway Center, Pittsburgh 30, Pa.

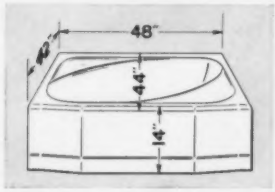
Jones & Laughlin

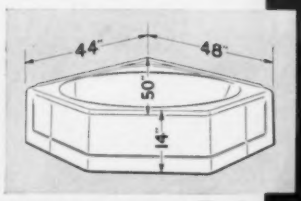
STEEL CORPORATION — *Pittsburgh*

J&L STEEL

(At the right) COSMOPOLITAN, recess. Sizes 4½′, 5′ and 5½′.

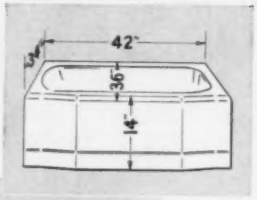
MAYFLOWER, recess. Integral seats. All parts can be reached for cleaning.

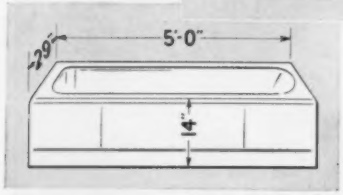




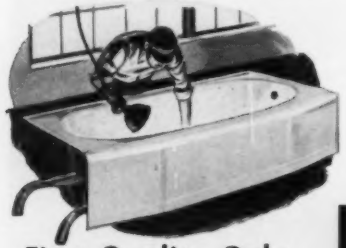
MAYFLOWER, corner. Fresh individuality of design; solves space problems.

STANDISH, shower size. For homes, apartments, motor courts, dormitories.





MINOCQUA. First quality; space-saving width; practical for remodeling.



First Quality Only

The enamel of all Kohler baths is inspected under strong light. Searching tests and inspections made throughout every step of manufacture.

KOHLER BATHS

RIGID CAST IRON

Sparkling, easy-to-clean Kohler enamel is fused to a base of non-flexing iron, cast for rugged strength and rigidity.

TILING-IN RIM

An integral flange that simplifies leak-proof installation with dry-wall or plaster construction.

MACHINE GROUND

Uniform length and width dimensions for fast, accurate tub-setting and wall finishing.

QUALITY FITTINGS

Designed expressly for Kohler fixtures; engineered for easy, reliable operation.

COMPLETE LINE

A range of styles, types and sizes for every space or budget—in white and six colors.

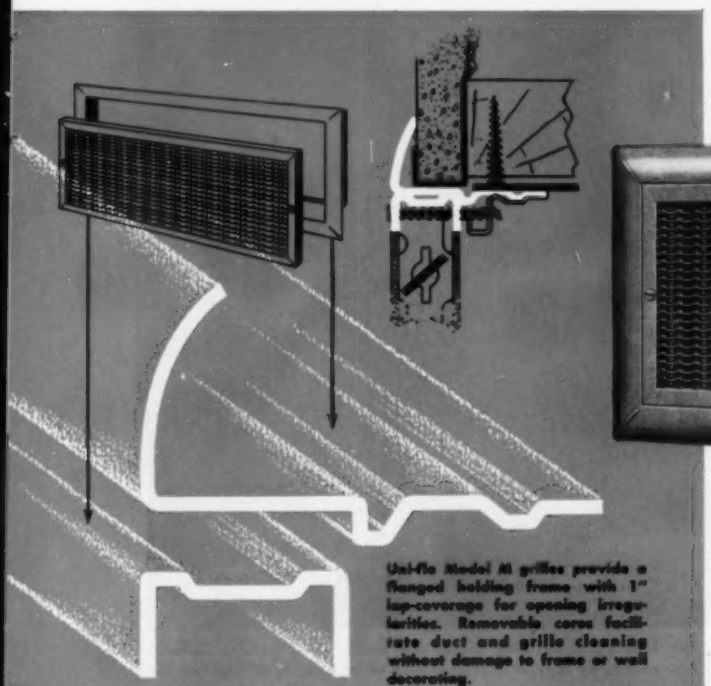
Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

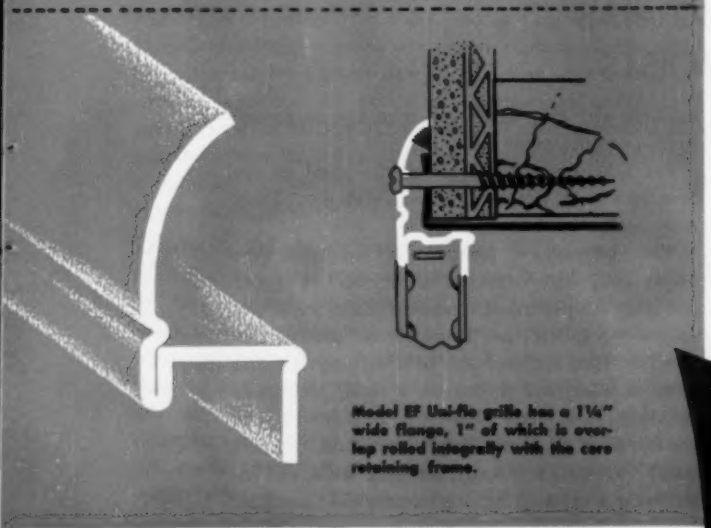
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

With Van Huffel
roller die, cold-formed

metal shapes



Uni-flo Model M grilles provide a flanged holding frame with 1" lap-coverage for opening irregularities. Removable cores facilitate duct and grille cleaning without damage to frame or wall decorating.



Model EF Uni-flo grille has a 1¼" wide flange, 1" of which is overlap rolled integrally with the core retaining frame.

Making air behave is a fine art at Barber-Colman Company, Rockford, Illinois . . . and has been for over twenty years. So much so their line of Uni-Flo engineered air distribution products has become the standard for comparison in the industry. Manufacturing know-how, backed by extensive laboratory facilities, which duplicate actual field conditions, guarantee efficient air distribution under even the most unusual conditions.

And, Barber-Colman knows which way the wind blows . . . *appearance-wise*. They know their products must combine strength and rigidity, yet be neat and inconspicuous architecturally. That's why Van Huffel, who has been making metal behave for half a century, was chosen to roller die form the grille frame sections shown at the left.

These are but a few of the thousands of intricate shapes Van Huffel produces to any lengths; in a wide variety of metals from coiled strip ½" to 33" wide; in gauges from .003 to .312; from forming dies designed and built in our own plant.

Van Huffel
TUBE CORPORATION · WARREN, OHIO

WHERE IDEAS TAKE SHAPE IN METAL

Emery Roth and Sons designed the first Penn Center building. *Owner and builder:* Uris Brothers; *General Contractor:* Cauldwell Wingate Co.; *Engineer:* James Ruderman. *Steel erector for joists:* G. & H. Steel Service.

FIRST PENN CENTER BUILDING HAS 17 FLOORS OF OPEN-WEB JOISTS

This twenty-story office building is the first completed unit in Philadelphia's huge center-of-the-city redevelopment program.

Standing on the site of the old Broad Street Station, the new building is the first of several similar structures, including a 1000-room hotel, which will occupy the eight-acre area between City Hall and Eighteenth Street, from Market Street to Pennsylvania Boulevard. The new buildings will flank a landscaped esplanade, with modern shopping facilities occupying the ground floors.

The first Penn Center building, known as No. 3 Penn Center Plaza, is a glass-and-limestone structure providing approximately 400,000 sq ft of office space. Continuous windows surround the building with glass bands, giving maximum natural lighting to the entire structure.

For floor construction, from the third to the twentieth story, Bethlehem Open-Web Steel Joists were used.

The advantages of using Bethlehem Joists were many. They were delivered to the job site tagged and ready for placing at an approximate rate of one floor a week, with no delays to the construction schedule. They required only field welding to secure them in place, and to provide a rigid, permanent construction, a factor which will help hold future maintenance to a minimum. Pipes and conduits could be run right through the open webs, and installation of recessed lighting fixtures was simplified.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

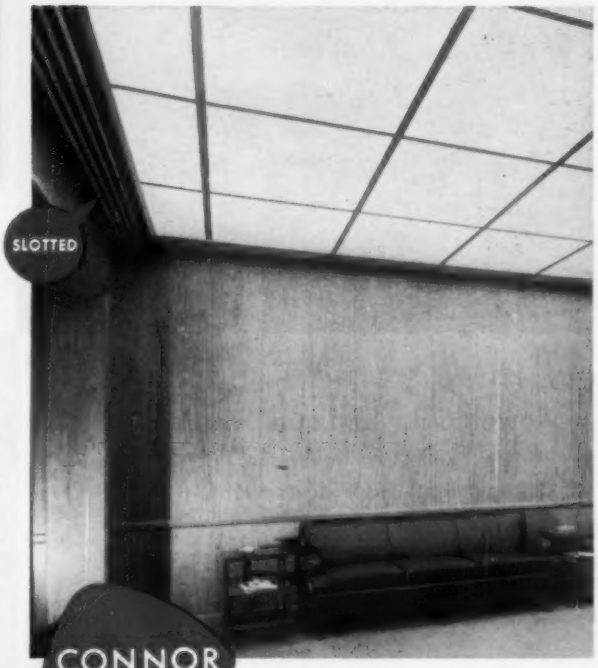
BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

Announcing

the kno-draft "ARCHITECTS' GROUP"

Square and Slotted Series Air Diffusers



Architects and engineers now have wide new latitude in selecting air conditioning outlets. The addition of this "Architects' Group" of square and slotted units to the famous line of round Kno-Draft Air Diffusers offers the industry's most complete line of engineered diffusers.

Kno-Draft Square Diffusers (Series KP): Two models, eight sizes. Neck diameters from 4 to 14 inches. Capacities from 50 to 1250 cfm. Sturdy pressed steel construction. Available, with or without patented sleeve damper or anti-smudge frame, for overlap installation in acoustical or plastered ceilings; or snap-in installation in T-bar ceilings. All units geometrically proportional so that, at constant neck velocities, static pressure is same for all sizes. Precise, *circular* diffusion patterns over large area assured.

Kno-Draft Slotted Diffusers (Series KLS): Two models. (1) Adjustable one-directional flow for offices, board rooms, etc. (2) Completely adjustable multi-directional flow for larger areas such as lobbies and auditoriums. Handsome extruded aluminum construction. Modules of 2, 3, 4 and 6 feet can be installed singly or butted in series to form continuous diffuser line on ceiling or wall. Exclusive Kno-Draft adjustable air direction vanes permit discharge pattern to meet individual job needs. Grid-type volume control damper permits easy system balancing. Damper grids equalize air distribution over length of diffuser.

For complete performance and selection data on the new "Architects' Group" of Kno-Draft Square and Slotted Diffusers, simply clip coupon to your letterhead and mail to Connor Engineering Corporation, Danbury, Connecticut.

CONNOR

kno·draft®

Square and Slotted Air Diffusers

CONNOR ENGINEERING CORP.
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Please send free copy of your Bulletin K-27 describing the "Architects' Group" of Kno-Draft Square and Slotted Air Diffusers.

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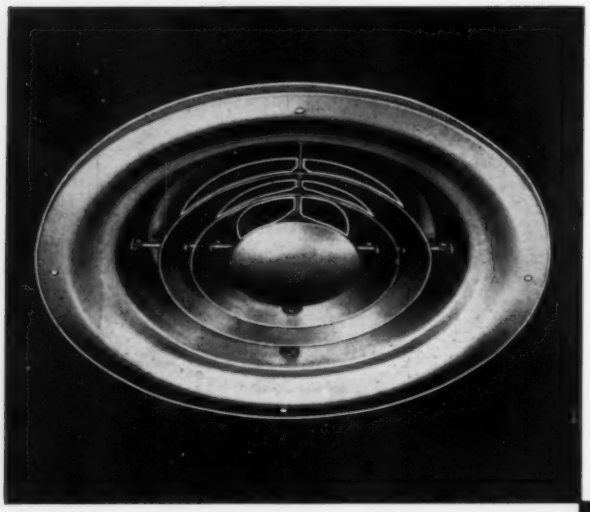
Easy on the eyes and ears

HEARD EVERYWHERE Lowell®

STL "St. Louis" Baffles

Modern design requires modern sound distribution equipment. That's one big reason why you'll find proved-in-performance Lowell baffles in today's best-designed buildings, large and small.

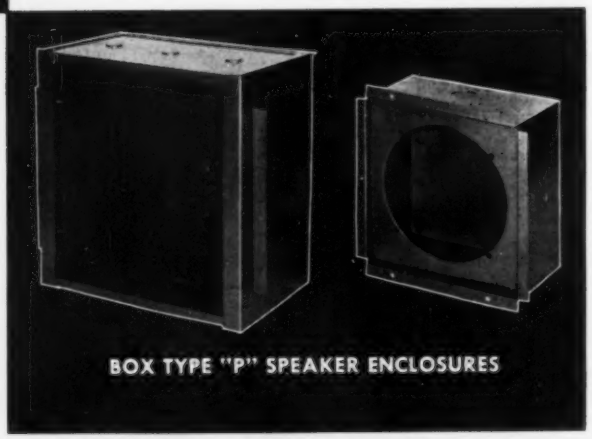


Lowell STL "St. Louis" Baffles

fit the needs of architects and acoustic engineers. Flush-mounting baffles are available in attractive brushed chrome or a variety of decorator colors. Full 360° "ear level" sound dispersion is assured by "floating" conical diffuser mounted on soft rubber grommets. Models for 6″ to 15″ speakers, in 18 gauge aluminum.

Lowell STL "St. Louis" Baffle

Lowell protective enclosures *really* protect against falling mortar, fire, rodents and dust. Built for long service of spot-welded rust-proofed heavy-gauge steel. Larger models are undercoated to prevent metallic resonance. Enclosures available at once for 6″ to 15″ speakers.



BOX TYPE "P" SPEAKER ENCLOSURES

Write for complete information and specifications

ONE source for immediate delivery of more than 100 models of wall and ceiling baffles, protective enclosures, grilles, mounting accessories and intercom equipment.

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For enduring beauty...

GOOD DESIGN and careful craftsmanship both help create beautiful masonry. But it also takes a quality mortar to achieve *lasting* good looks.

Atlas Mortar Cement helps assure better mortar because its quality is carefully controlled. Every bag gives the same dependable performance—promotes uniform color and durable, weather-resistant joints.

Durability under freezing and thawing conditions is provided by the air-entraining properties of Atlas Mortar Cement. The added smoothness and workability retention aid fine masonry craftsmanship.

Brick, block and stone look their best in a setting of Atlas Mortar. For lasting good looks on your next project specify Atlas Mortar Cement. *Complies with ASTM and Federal Specifications for masonry cement which now include requirements for soundness (low expansion) in autoclave.*

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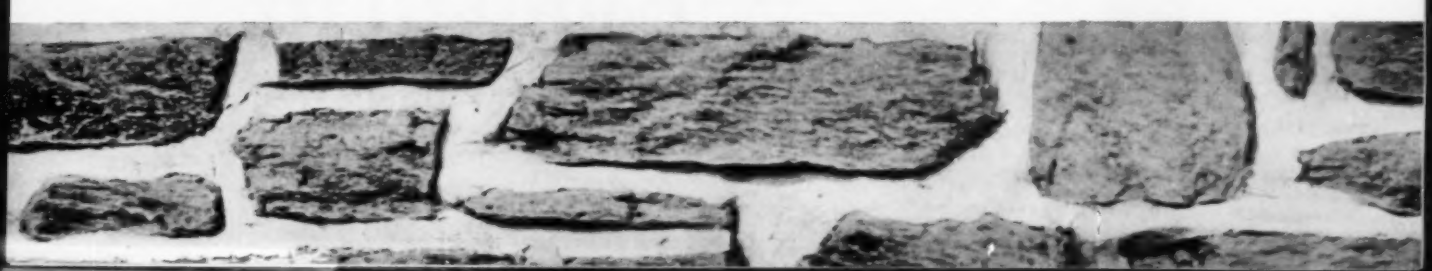

BUDD ENDS MAINTENANCE PROBLEM WITH MICARTA PLASTIC SURFACES

Canadian Pacific's new passenger fleet features colorful, carefree MICARTA surfaces in all interiors

In designing this new fleet of passenger cars, Budd and Canadian Pacific found a way to keep interiors cheerfully bright and inviting—*without the necessity of repeated refinishing.*

In sleepers, lounge cars, dining cars, deluxe and scenic dome coaches, colorful, durable MICARTA was employed for wainscoting, pier panels, ceilings and coves, main partitions, tables, shelves and racks.

MICARTA was chosen because it offers the perfect blend of beauty and utility. Its tough, mirror-smooth surface will stand up to the abuse of thousands of careless, bustling travelers. It cleans "like new" with merely a damp cloth. It never needs refinishing.

This progressive step in car design promises the railroad industry more attractive and functional car interiors at a substantial savings in upkeep costs—savings that will quickly repay the initial cost of this durable plastic surfacing material.

For complete information on MICARTA for car interiors, write United States Plywood Corporation, MICARTA Division, 55 West 44th St., New York 36, New York.

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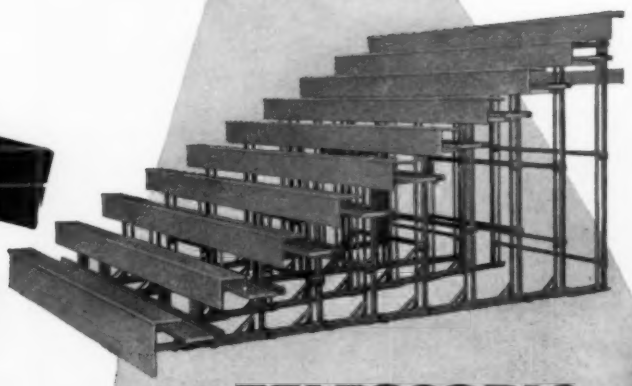
largest plywood organization in the world

MEDART



TELESCOPIC GYM SEATS*

enduring service, safety and satisfaction

Safer—FOUR double *vertical* uprights support *each* row. All spectator load rests directly on the floor, not on casters or walls.

Easier Operation—Interlocking of multiple supports and cushion-roller housings make for straight trackage, prevent binding, require minimum effort to open and close

Stronger—All-steel understructure is self-supporting. Wood members provide *additional* strength.

Roomier—22″ or 24″ row depth models with extra toe and heel clearance offer more comfort. Row rise of 10½″ or 11½″ provide maximum visibility

Better Looking—Smart and beautiful natural wood, richly and durably finished

Write for ***NEW*** *catalog*

FRED MEDART PRODUCTS CO., INC. • 3540 DEKALB ST. • ST. LOUIS 18, MO.

SPECIFY the best, then INSIST on it!

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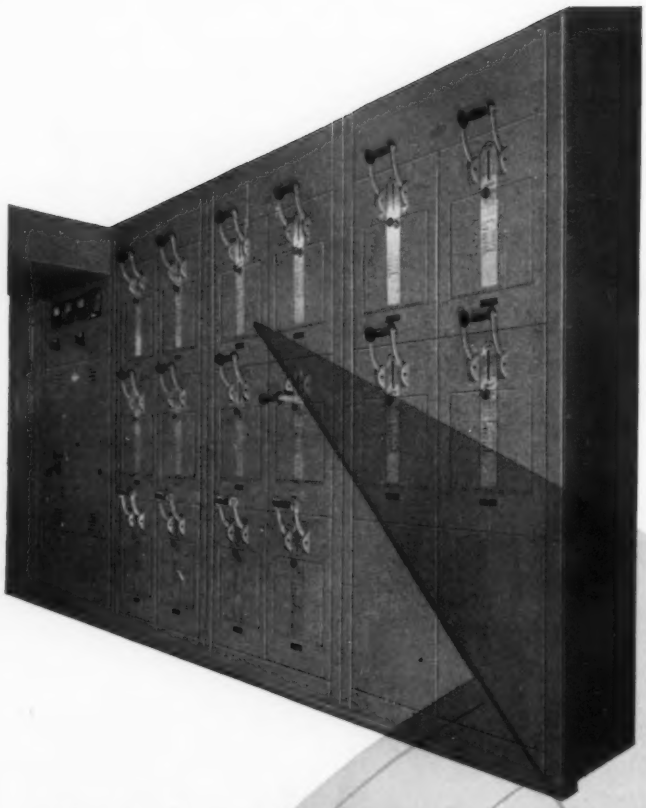


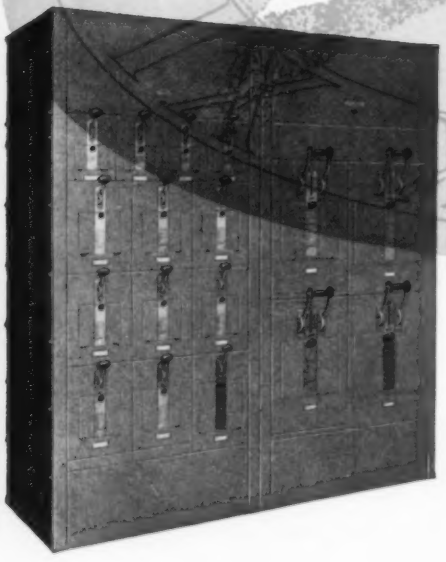
Include one of these safe, efficient and dependable FA switchboards in all your plans for new or modernized buildings.

Built of standardized pre-assembled units, incorporated in standardized enclosures, FA switchboards embody all the latest features in design and construction to assure the maximum in performance and operating efficiency and at substantial savings in maintenance costs.

Approved by the Underwriters' Laboratories' Incorporated for label service, all FA switchboards are factory-assembled, including bus bars, and are shipped ready for connection to main and branch cables. Units can be arranged singly or grouped, because all sections fit readily together. Removable end walls permit addition of sections on either side.

for long-lasting trouble-free service

For further information regarding these longer-lasting, trouble free switchboards contact your nearest FA Representative listed in Sweets. He will be glad to tell you more about them.



shutlbrak

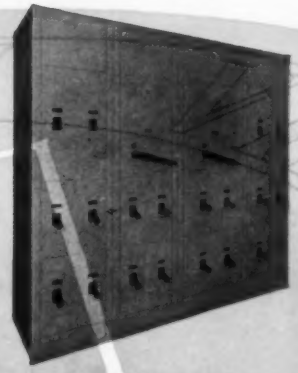
A safety type switchboard designed for frequent and heavy duty. Features the FA shutlbrak switch, a horsepower-rated, front-operated heavy duty operating switch with quick make and quick break operation and interlocked fuse doors to permit access to fuse compartment only when switch is "off" (Special release provided for access in "on" position.) Heavily silver-plated copper contacts, new clamp type fuseholders and solderless connectors are other features.

Capacities: 30 to 1200 amps., 240 volts AC or DC and 600 volts AC 2, 3 and 4 poles. Rotary operating handles furnished on 30 to 200 amps. capacities. Straight handles on all others.

klampswitchfuz and snufarc

The klampswitchfuz or snufarc is a hinged type horsepower-rated operating switch unit that combines both disconnect switch and fuse protection into one unit, assuring years of trouble-free service. Heavily silver-plated copper contacts clamp fuses under pressure for low-resistance contacts. Access to fuses can be had only when door is open.

Klampswitchfuz, capacities 30 to 600 amps., 250 volts AC or DC 2, 3 and 4 poles, single or double throw. Snufarc ratings: 30 to 200 amps., 600 volts AC 2, 3 and 4 poles.

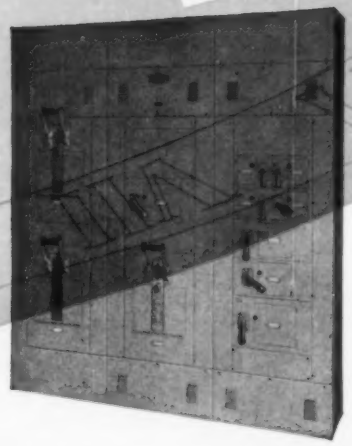


circuit breaker

A safety type switchboard that offers the latest developments in automatic protection of main and branch feeder circuits. Circuit breakers are thermal-magnetic trip, molded case type. Handle of breakers automatically moves to the "tripped" position on short circuits or dangerous overloads. After cause of trouble has been removed, handle can be restored to "on" position without inconvenience of replacing any part.

Capacities of circuit breakers 15 to 600 amps., 250 volts AC or DC and 600 volts AC 2 and 3 poles. Air circuit breakers are used on larger capacities.

choose FA SWITCHBOARDS



switchboard front connected

A unit type of switchboard for use where floor space is limited.

Like all FA switchboards, these boards are built of standard pre-assembled switching units that fit readily together to form one complete assembly. Designed for mounting against wall, they are constructed of standardized unit type sectional steel enclosures with integral pull boxes top and bottom. Switching units are either shutlbrak or klampswitchfuz plug-in design permitting ready interchangeability and replacement. Maximum feeder capacity 2000 amps., maximum branch circuits 1200 amps. 250 and 600 volts.

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This warehouse contains over 100,000 sq. ft. Albert C. Martin & Associates, architect and engineer. Lindgren & Swinerton, contractor.

Attractive Commercial and Industrial Buildings easily achieved with TILT-UP CONSTRUCTION

Buttress & McClellan, Inc., architect, engineer and contractor.

William P. Neil Co., engineer and contractor.

The Austin Co., architect, engineer and contractor.

These four concrete tilt-up buildings, designed and built by Los Angeles firms, are part of an industrial development in Vernon, Calif. They show how tilt-up walls can be combined with interesting architectural details to create distinctive, modern styling.

In the General Electric warehouse, windows are shaded by concrete canopies. The square pattern in the Mallinckrodt building was formed by wood strips placed in the form before casting. Tilt-up construction details in the Abbott Laboratories are masked by colored window trim and stone planters. The bold Sylvania name stands out against a large plain wall.

In all cases the uniform color and texture in the concrete panels furnish an excellent background for company names and trademarks.

For more information about tilt-up design and construction write for free illustrated literature. It is distributed only in United States and Canada.

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A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Give TEXTURED beauty a place in your plans

No need to sacrifice fashion for function in your interior planning. Textured Masland Duran combines both. Here is the rich look of luxurious woven fabric on durable, easy to clean vinyl plastic—practical beauty in exceptional colors and patterns to give the crowning touch of taste and distinction to all types of furniture. You can be sure of client satisfaction—both from a decorative and economical standpoint—when you suggest or specify Masland Duran. Wide range of handsome House and Garden colors. Write for samples. The Masland Duraleather Company, Dept. 36, Philadelphia 34, Pa.

BEAUTY . . . How much design freedom does sound conditioning permit?

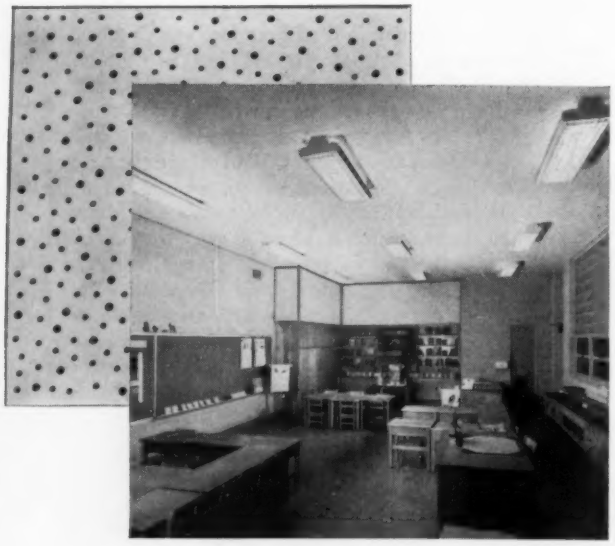
For years the ceiling was the forgotten factor in interior styling. Today's growing use of acoustical materials, however, has put new emphasis on their decorative possibilities. The wide variety of noise-absorbing materials now available permits the use of sound conditioning in any interior where attractive appearance is required.

To offer a wide decorative range when specifying sound conditioning, Armstrong acoustical materials are made with a white paint finish that can be easily repainted to match any desired color plan. For further decorative freedom, these materials come in two basic designs, textured and perforated.

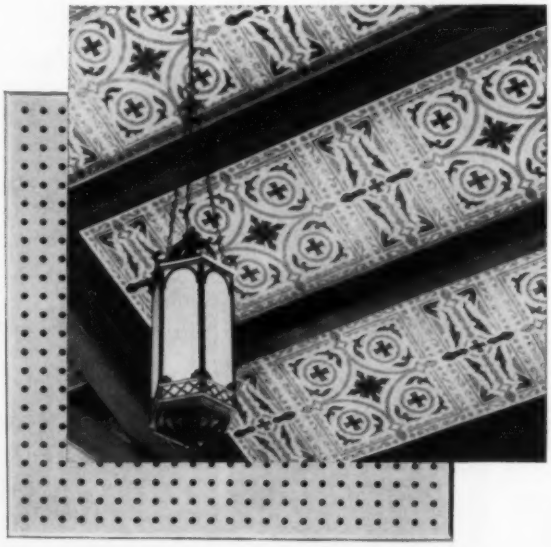
Textured tiles, such as Armstrong Travertone and Corkoustic, have irregularly fissured surfaces which give them the smart appearance of travertine marble. The newest Armstrong textured material, Crestone, is striated to create strong directional lines of high light and shadow. Textured materials blend equally well with both traditional and contemporary styled interiors.

Perforated materials in the Armstrong line with the conventional straight row design of holes include Cushiontone, Arrestone, and Perforated Asbestos Board. For a more modern, monolithic ceiling effect, Cushiontone, Minatone, and Arrestone are made in the new Full Random pattern of vari-sized, non-directional perforations.

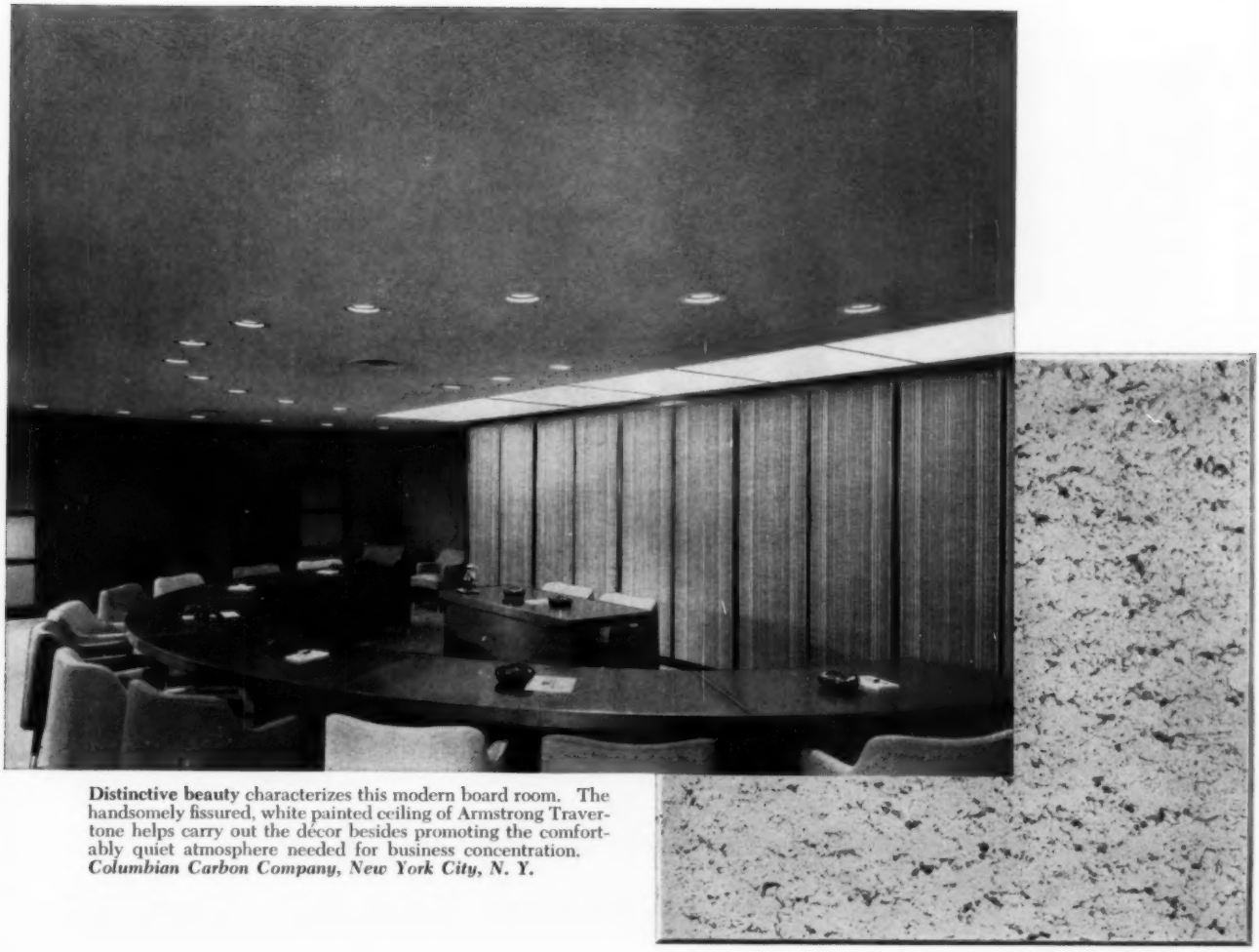
You can get complete information on the entire line of Armstrong sound-conditioning products from your Armstrong Acoustical Contractor. **For the free booklet,** "Armstrong Acoustical Materials," write Armstrong Cork Company, 4203 Rock Street, Lancaster, Pennsylvania.



A bright, cheerful schoolroom helps put children at ease, simplifies classroom discipline for the teacher. Here, a noise-muffling ceiling of Armstrong Minatone in the Full Random pattern helps create the desired non-institutional atmosphere.
Wisdom Lane Elementary School, Levittown, N. Y.

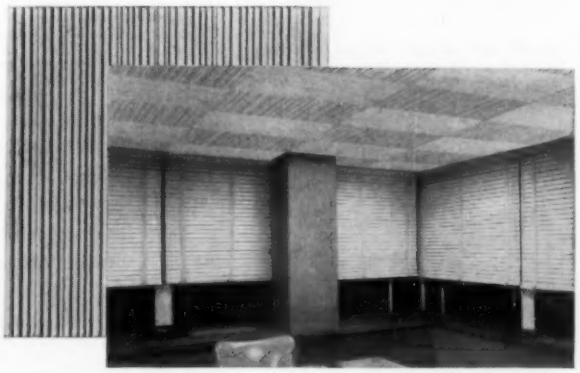


A colorful design has been stenciled on the sound-absorbing Armstrong Cushiontone ceiling to make an important contribution to this church's interior beauty. Cushiontone can be washed or repainted whenever necessary without losing its acoustical efficiency.
St. John Vianney Church, San Jose, Calif.



Distinctive beauty characterizes this modern board room. The handsomely fissured, white painted ceiling of Armstrong Travertone helps carry out the décor besides promoting the comfortably quiet atmosphere needed for business concentration.
Columbian Carbon Company, New York City, N. Y.

Modern lighting blends well with this bus terminal's noise-quieting Arrestone ceiling. Armstrong Arrestone comes with a baked-on, white enamel finish, but it can be specially prepainted on order. It's also available with a bare mill finish.
Port Authority Bus Terminal, New York City, N. Y.



The decorative ceiling of Armstrong Crestone contributes much to the décor of this office. Crestone's striated surface pattern offers a variety of attractive design possibilities. The surface striations help diffuse light evenly.

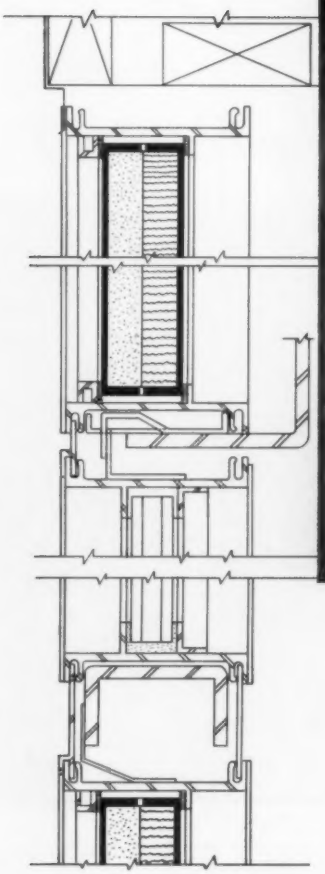
Armstrong

ACOUSTICAL MATERIALS

Cushiontone® • Travertone* • Arrestone® • Minatone®
Corkoustic® • Crestone* • Perforated Asbestos Board

*TRADE-MARK

PANEL WALL CONSTRUCTION DETAILS...



Simplified vertical section showing method of fastening Erie panels and sash frame mounting details.

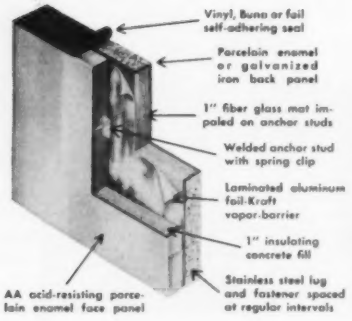
Architects: Yount & Sullivan, Dayton, Ohio. National Cash Register employees' Credit Union Bldg.

Erie INSULATED PORCELAIN ENAMEL PANELS advance Thin-wall Construction

Erie U-16 insulated wall panels, finished in colorful porcelain enamel, offer architects the ideal solution to high efficiency thin-wall construction.

Engineering and detailing is no problem because sash frame manufacturers have this standardized to a desirable degree. And the ERIE U-16 or U-20 Panels are directly adaptable to virtually all available sash frames or mullion bar systems.

When you want the space-making advantages of thin-wall construction plus adequate insulation values, a variety of permanent colors and no maintenance . . . specify ERIE Insulated Porcelain Enamel Wall Panels.

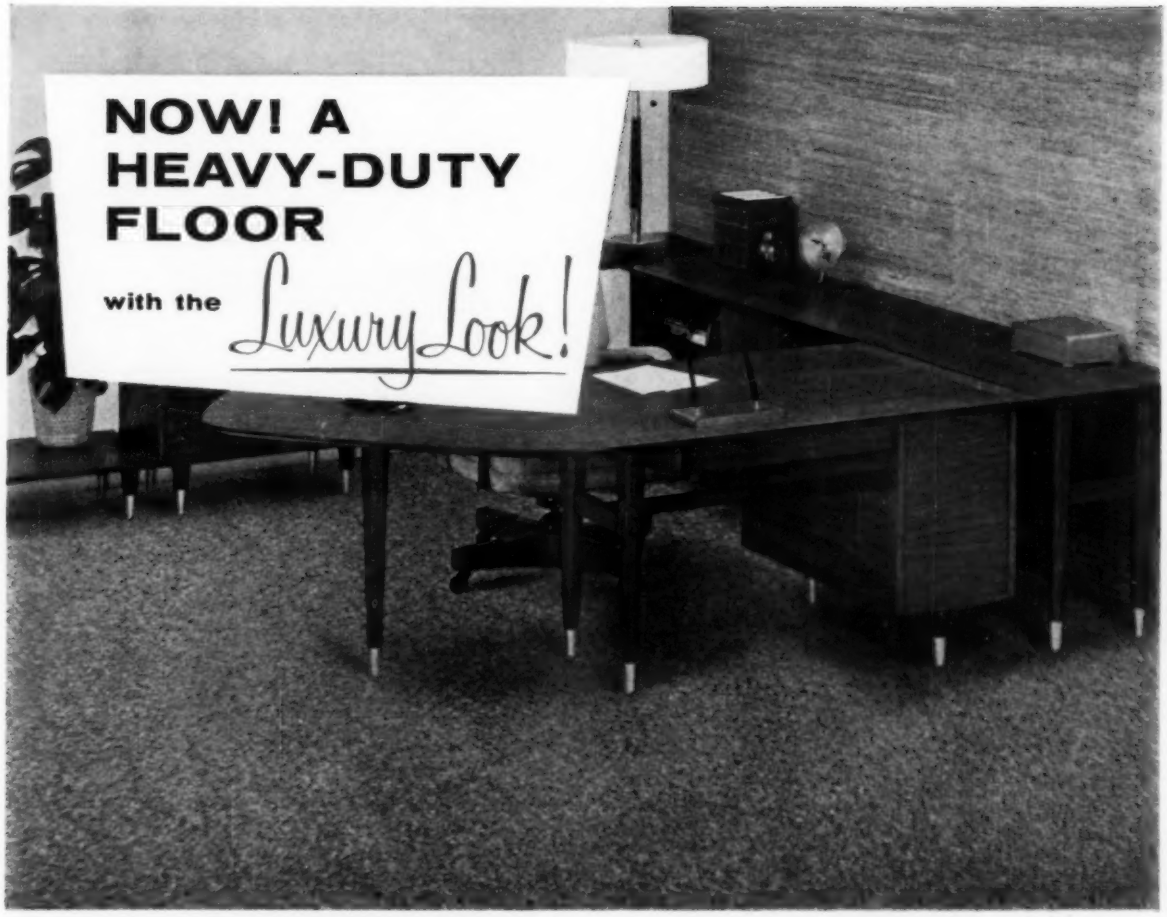

Vinyl, Buna or foil self-adhering seal
Porcelain enamel or galvanized iron back panel
1" fiber glass mat impaled on anchor studs
Welded anchor stud with spring clip
Laminated aluminum foil-Kraft vapor-barrier
1" insulating concrete fill
Stainless steel lug and fastener spaced at regular intervals
AA acid-resisting porcelain enamel face panel

This Erie U-16 panel, 2 inches thick and mechanical assembled, is fully insulated with fiber glass and insulating concrete. Special lamination of aluminum foil and Kraft provides effective 2-way vapor barrier.

- Adds floor space
- .16 or .20 U-Factor

Lifetime Color

THE Erie ENAMELING COMPANY
ERIE, PENNSYLVANIA
CHICAGO • PHILADELPHIA



GOLD SEAL SEQUIN* INLAID LINOLEUM ⅛" GAUGE IN RICH DARK BROWN. "CONTINENTAL FURNITURE" BY STANDARD.

New, exclusive Gold Seal "Sequin" Inlaid Linoleum brings you a new kind of beauty for commercial installations. It presents a sweeping, virtually seamless expanse of wall-to-wall richness. Seven decorator-styled colors provide ample selection to match any room decor!

This rugged product is highly resilient . . . quiet and comfortable underfoot. Its satin smooth surface seals out dirt and resists stains which means maintenance will be easy. Give *your* clients all these extra advantages—specify new Gold Seal "Sequin" ⅛" Inlaid Linoleum.

Abrasive Wheel Test proves "Sequin" "looks like new" through long service life!

The circular "After Test" area is the result of applying the abrasive wheel to the "Sequin" sample. See how it *has worn well through the linoleum*—and yet the pattern is still there, as clear and sharp as ever! Compare it with the "Before Test" area. *You can't tell the difference!* Write to Architects' Service Department, Congoleum-Nairn Inc., Kearny, N. J., for further information and samples.

SPECIFICATIONS

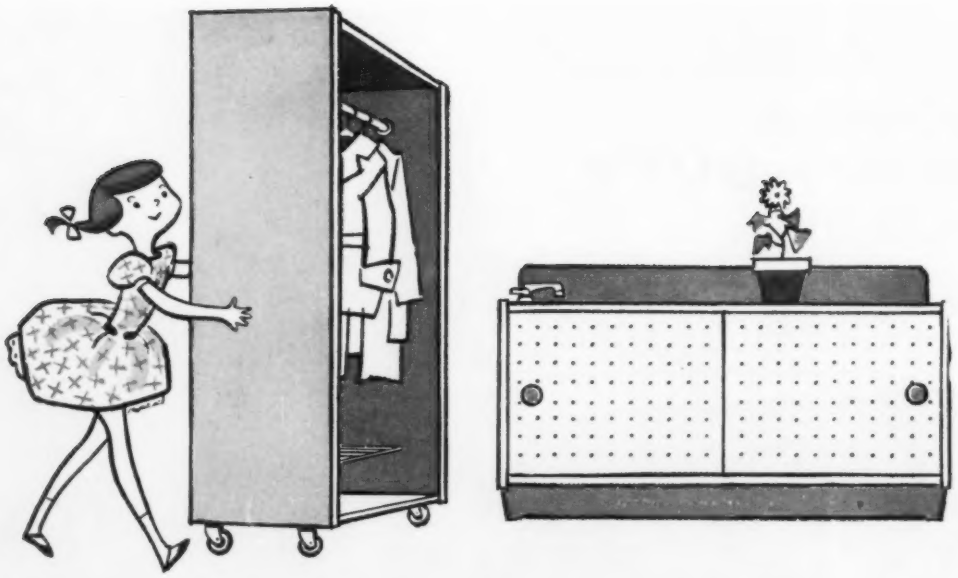
6-ft. wide yard goods. ⅛" gauge, burlap backed. Install over suspended wood or concrete subfloors. Available in: grey, green, dark brown, white multi, grey mix, taupe, beige. Also made in standard gauge for residential use —in 16 colors.

FOR HOME OR BUSINESS:

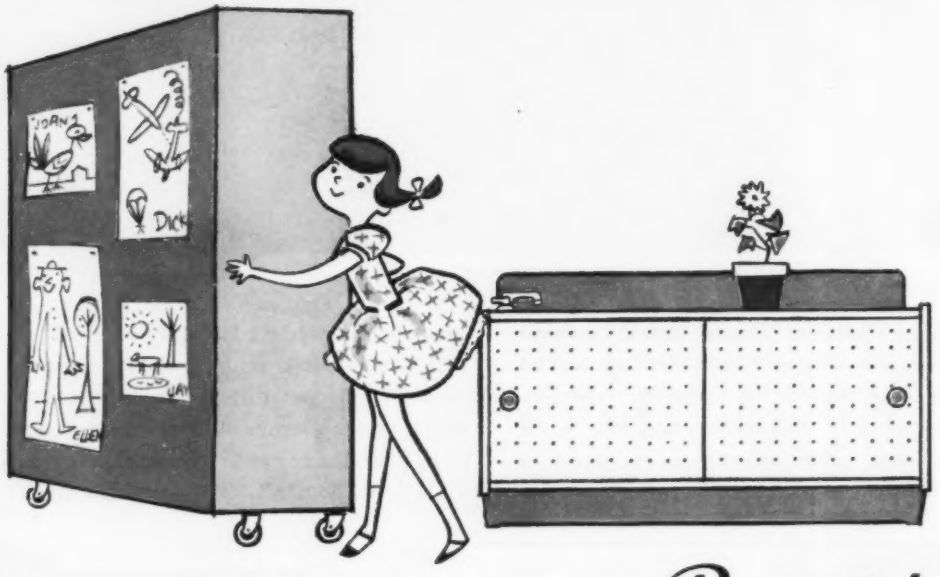
INLAID BY THE YARD—Linoleum • Nairon* Standard • Nairontop*
RESILIENT TILES—Rubber • Cork • Nairon Custom • Nairon Standard
Vinylbest • Linoleum • Ranchtile® Linoleum • Asphalt
ENAMEL SURFACE FLOOR AND WALL COVERINGS—
Congoleum® and Congowall®
RUGS AND BROADLOOM—LoomWeve*

© 1956 CONGOLEUM-NAIRN INC., KEARNY, N. J.

FOR THE LOOK THAT'S YEARS AHEAD
Gold Seal®
FLOORS AND WALLS
*Trademark



Add flexibility to your classrooms



with movable cabinets by *Brunswick*

Turn about is fair play with this little Miss and Brunswick's new Movable Student's Wardrobe.

One side is for storage—has 15 coat hangers, 12 hooks, a shelf for lunch boxes, space for boots. The other side carries a corkboard back for pictures, assignments, articles, anything.

This wardrobe-on-wheels is factory built—cuts costly on-the-job construction of millwork. It's available in three interior colors—is completely integrated with Brunswick's complete cabinet line.

All Brunswick Classroom Equipment is like this—flexible, versatile, easy to use and move.

Your Brunswick representative will be glad to give details on the complete line.

Brunswick

THE BRUNSWICK-BALKE-COLLENDER COMPANY

623 South Wabash Ave., Chicago 5, Illinois

A lifetime of protection in 6 captivating colors

The K&M roofing shingles illustrated are Peacock Blue. Other "Dualay" colors are Antique Red, Rustic Brown, Green Pastel, Red Pastel, and Lindenwold.

K&M "DUALAY" ASBESTOS ROOFING SHINGLES !

You'll find it easy to plan extra beauty into any home with "Dualay" asbestos shingles. There's a choice of six smart colors to work with. These remarkably durable shingles provide lifetime roofing protection, and assure freedom from costly maintenance over the years.

One shingle—two effects. "Dualay" shingles can be applied to produce either a straight butt or thatched butt. Because of their large unit size and self-aligning design, they can be applied quickly and easily.

Get all the facts. You'll find details on K&M "Dualay" shingles in your *Sweet's Architectural File*. Or write directly to us for a descriptive color folder. *Literature on K&M siding shingles also is available.*

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos®

Stainless steel curtain wall construction, as used (right) for the Gateway Center buildings in Pittsburgh; (below) for an industrial research laboratory; and (inset, right) to modernize an existing office building—illustrating the adaptability of curtain walls for all types of structures, large or small, new or old.

YOU CAN BUILD FOR THE AGES . . . with a STEEL FOR THE AGES

"INFO" for Architects and Builders . . .

Write for your copies

1. "AL Structural Stainless Steels" —12 pages on stainless grades, properties, forms, finishes, standard "specs," uses and advantages.
2. "Stainless Steels for Store Fronts and Building Entrances" —40 pages of valuable data on examples and details. A1A File No. 26D.
3. "Stainless Steel Curtain Walls" —A 24-page progress report on methods. A1A File No. 15-H-1.

Address Dept. R-75.

What's the building on *your* mind? Maybe a big multi-story structure—or an industrial building, like our own Research Laboratory (see above)? Maybe a plant office building—or a bank, store, school, power station, warehouse, hospital, hotel? Or perhaps it's an existing structure that needs a face-lifting—modernizing the exterior, as well as the interior.

In any case, you're sure to consider *curtain wall* construction, because it's the newest, most modern method. Packed with advantages over masonry, too: such as fast, all-weather installation, more space per floor; more floors on a given foundation, etc. And you'll be equally sure to realize that *stainless steel-surfaced panels* (again, see above) promise the best long-term protection for the building investment. No other surfacing material is at once as hard, tough, strong, and lastingly beautiful, as impervious to wear and as resistant to heat and corrosive influences as stainless steel.

That's just why Allegheny Metal generally figures to last longer and cost less in the long run—wherever you use it. Let us help you to realize its benefits. ***Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.***

Make it BETTER-and LONGER LASTING-with

AL Stainless Steel

AL ALLEGHENY LUDLUM

Warehouse stocks carried by all Ryerson Steel plants

W&D 5287C

With the all-new Janitrol *WIN-SUM-MATIC*

HEAT & COOL in 4½ sq. ft.

Optional Add-On Cooling
Uses No Water

This beautiful, compact Janitrol WIN-SUM-MATIC year 'round conditioner needs no more floor space than a furnace . . . gives you welcome new freedom in designing your homes for all-year comfort, with important savings in valuable living space.

The WIN-SUM-MATIC effects important cost-savings, too. The remote compressor is *air-cooled*, needs no water . . . eliminates plumbing and sewer connections, along with water service and maintenance costs. A single duct system is used for both heating and cooling, and if desired, the cooling coil compartment of the cabinet may be left empty for addition of cooling at owner's convenience.

Specify the WIN-SUM-MATIC for *your* homes. Models for basement, utility room or closet installation to assure the highest standards of comfort and livability with either conventional or perimeter systems.

"Pride O' Yard" Condenser—Low, sleek, distinctively beautiful. Air-cooled—no water needed. Operates with outside temperatures to 125° F. "Top-Exhaust" eliminates side discharge of exhaust air, protects growing things, steps up cooling efficiency. *Only Janitrol has it!*

- Up-flow and Counter-flow models
- 3-second seasonal changeover
- Janitrol gas-fired "heating heart"
- Uses same ducts to heat and cool
- 2, 3 and 5 H.P. cooling capacities
- Completely waterless operation
- Optional cooling—cooling section may be added later

®Janitrol
HEATING AND AIR-CONDITIONING DIVISION

SURFACE COMBUSTION CORPORATION, Columbus 16, Ohio
In Canada: Moffat Heating and Air Conditioning Division of Moffat's, Ltd., Toronto 15.

MAIL COUPON TODAY!

Air-Conditioning Sales Manager
JANITROL Heating and Air Conditioning Division
Surface Combustion Corporation
Columbus 16, Ohio

Please rush complete specifications and illustrated literature on new Janitrol WIN-SUM-Matic year 'round conditioners!

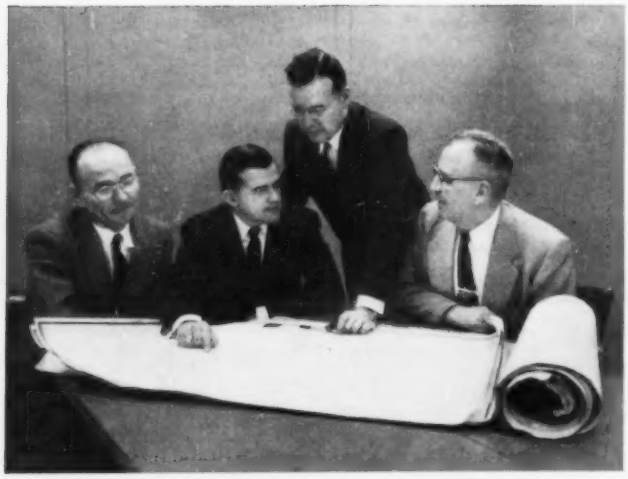
NAME_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

Long electrical feeders were needed to serve building's rambling wings and 10-story tower, thus making higher-voltage system ideal.

Higher-voltage General Electric distribution



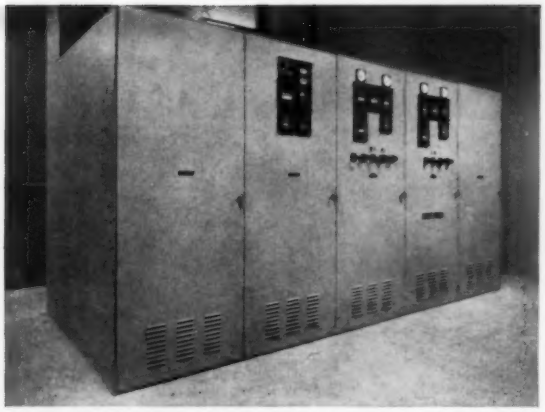
G-E ENGINEERING assisted from planning to start-up. Here G-E engineer, G. E. Troyak (standing), confers with J. F. Hegberg, assistant manager—building service; N. K. Knafla, chief electrical engineer of Magney Tusler & Setter, architects and engineers; and A. S. Ingebredtsen of Electric Repair & Construction Co., electrical contractors.

Planners use 480Y/277-volt savings to provide liberal capacity for future loads

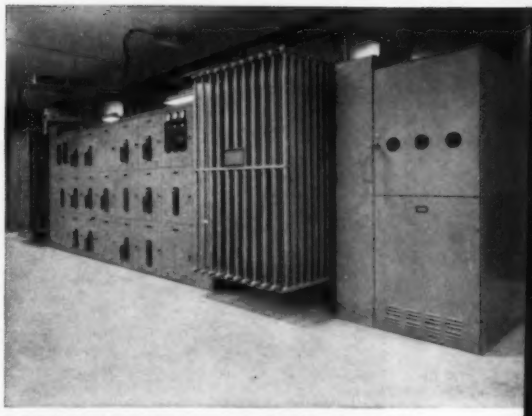
Featuring high-level lighting, year-round air conditioning, banks of business machines, escalators, and elevators, the new North Central Home Office Building of the Prudential Insurance Co. has an average of almost 10-volt-amps of electrical load for each of 292,000 square feet of floor space. In spite of this dense load, Prudential was able to save money on the vital power distribution system serving its Minneapolis building.

SAVING WAS MADE POSSIBLE by using a 480Y/277-volt distribution system to serve most of load. It would have cost about $50,000 more for a comparable system with 120/208Y volts. The present system has liberal capacity already designed-in to accommodate future increases in electrical demand. Also, to assure reliability, it has two primary power sources, with equipment to switch automatically from one to the other in emergencies.

Key to economies of this sytem is that the higher the secondary voltage, the lower the current for a given kva load. Lower current-carrying requirements mean conductors, such as cable and bus, can be smaller or fewer in



SYSTEM PROTECTION at dual 13.8-kv service entrance is provided by highly reliable G-E metal-clad switchgear, which automatically switches to second line if power fails.



EXTRA RELIABILITY is assured by double-ended substation supplying 480Y/277 volts. Either transformer can maintain building services.

NECESSARY 120-V POWER for incandescent lights, business machines is provided by G-E unit substation. Drawout circuit breakers facilitate cleaning and inspection of units.

WELL-LIGHTED offices utilize G-E 265-v ballasts with standard G-E fluorescent lamps to maintain design illumination of 40 foot-candles.

system saves Prudential estimated $50,000

number, and circuit breakers can handle higher loads. Other savings come from 440-v motors and control, and reduced voltage drop.

THREE CRITERIA governing applicability of 480-volt system to specific buildings are: (1) load make-up—at least one-third of load must use 480 or 277 volts; (2) load magnitude—total load must be at least 200 kva with primary service, 1000 kva when served from secondary network; (3) length of risers and feeders—if these average 200 feet system will be economical regardless of (1) above.

This system can pay off for you too—and so can General Electric engineering assistance available to you with G-E equipment. Contact your nearest G-E Apparatus Sales Office for full details or mail coupon at right. General Electric Co., Schenectady 5, N. Y.

JUST RELEASED: A More Power to America program on power distribution for commercial buildings. Featuring an informative, entertaining full-color film, "The Tenant at 1010 Main," the program portrays the benefits of an adequate system and 480-volt distribution. Ask your G-E Representative about it or mail coupon.

Engineered Electrical Systems for Commercial Buildings

GENERAL ELECTRIC

FOR MORE INFORMATION MAIL COUPON TODAY

GENERAL ELECTRIC CO.
SECTION 680-3A
SCHENECTADY 5, N. Y.

Please send me:

☐ "Modern 480Y/277-volt Power Distribution Planning Guide" (GEA-6344)

☐ "Modern Distribution Equipment for Commercial Buildings in Secondary Network Areas" (GEA-6223)

I am also interested in ☐ borrowing, ☐ purchasing "The Tenant at 1010 Main," 33-minute, color, motion picture.

NAME.....

POSITION..... COMPANY.....

ADDRESS.....

CITY..... STATE.....

The thermostat on the wall

Outmodes annoying, ineffective manual-comfort controls

The thermostat that was styled with modern architecture in mind

The Honeywell Round is the most popular thermostat sold today—and the first truly *new* design in years. Made in pneumatic, electric, and electronic models for accurate, economical control of heating or cooling in hospitals, apartments, offices, schools, industrial buildings, hotels, motels and homes.

TODAY there's one sure method of providing constant comfort without tiresome, time-consuming adjustments of switches or valves on the heating or cooling unit.

Key to this one sure method is a thermostat on the wall.

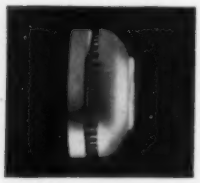
Thermostatic control is automatic—all year. There's no manual on-off operation with resulting cycle of too-hot, too-cool. Provides uniform comfort both winter and summer.

Thermostatic control is sensitive. The thermostat is a precision instrument; it maintains a set temperature accurately.

Thermostatic control is convenient. Unlike switch or valve types of heating control, the thermostat is always conveniently located. Changing a setting is easy and sure.

Honeywell thermostat systems are versatile. Only Honeywell makes all three types of thermostats—pneumatic, electric, electronic. Each group offers a choice of many models.

For complete information and help in selecting thermostatic controls for your clients, call your nearest Honeywell office. For more details on the Honeywell Round, write Honeywell, Dept. AR-3-40, Minneapolis 8, Minn.



Practical! Ruggedly designed, yet it's precision-built for long service.

Easy to use! Setting and checking are simplified by one easy-to-read scale.

MINNEAPOLIS **Honeywell**

Sign of sure comfort—a thermostat on the wall H HONEYWELL *First in Controls*

CEILING UNLIMITED!

Unlimited life—plus life-long economy of operation—are just a few of the advantages of an all-aluminum **HONEYLITE** ceiling. Made of HEXCEL aluminum honeycomb, this revolutionary new illuminated ceiling will never crack from heat or discolor with age. As functional as it is beautiful, **HONEYLITE**'s thousands of ¼-inch hexagonal cells diffuse light evenly into every corner of the room with less than 15% loss in light "put-through." This means fewer lighting units and lower installation and operating costs.

HONEYLITE panels are available in standard sizes for easy installation in standard T-bar suspension systems. Easily removable, relamping and maintenance work is reduced to a minimum.
Specify **HONEYLITE** in your next installation—for these additional reasons you'll be glad if you do:

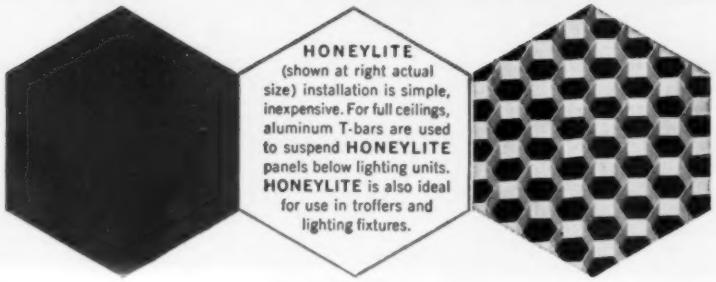
- ★ 45° and/or 60° light cut-off provides effective shielding
- ★ Non-flammable and UL approved
- ★ Weighs only two ounces per square foot
- ★ Free circulation of air prolongs life of light units
- ★ Provides lowest surface brightness obtainable
- ★ Has noise reduction coefficient of .46
- ★ Non-static and dust resistant
- ★ May be cleaned with ordinary vacuum brush attachment

One of the most amazing products to come out of the jet age, Hexcel aluminum and glass-fabric honeycomb combines lightness with strength to give the F-100 Super Sabre maximum speed, maximum striking power. The secret is sandwich construction. When "sandwiched" between two sheets of lightweight metal, Hexcel honeycomb core produces a structural material with the highest strength-to-weight ratio ever developed!

In aircraft construction, in spandrel panels for the building industry, and now in louverall lighting—Hexcel aluminum honeycomb is finding new uses every day! If you think it could solve an engineering or design problem of yours, wire or write to

HEXCEL PRODUCTS, INC.,
951 61st St., Oakland 8, Calif.

NATIONAL HOUSING CENTER, WASHINGTON, D. C. AUBINOE, EDWARDS AND BERRY, A. I. A.



HONEYLITE (shown at right actual size) installation is simple, inexpensive. For full ceilings, aluminum T-bars are used to suspend **HONEYLITE** panels below lighting units. **HONEYLITE** is also ideal for use in troffers and lighting fixtures.

HONEYLITE®

Light-diffusing acoustical aluminum honeycomb

A development of **HEXCEL PRODUCTS INC.**

Producers of HEXCEL aluminum honeycomb — the wonder material

30% less labor Costs, 15% less Waste

With CELOTEX®

*REG. U. S. PAT. OFF.

Double-Waterproofed INSULATING SHEATHING

Because Celotex Insulating Sheathing is easier to cut and fit, it goes up 30% faster, with up to 15% less waste. It insulates and weatherproofs as it builds, at *one* cost, and makes building paper unnecessary. Laminated for extra strength and rigidity, with no corner bracing needed with 4' wide, 25/32" thick Celotex Insulating Sheathing to meet FHA requirements. Has approximately 30% greater strength than ordinary sheathing with let-in bracing, as proved in actual demonstrations by independent testing laboratories.

Only Celotex Insulating Sheathing is made from tough, interlocking, long Louisiana cane fibers . . . nature's long-life fibers . . . protected against dry rot and termite attack by the exclusive Ferox® Process. This ideal basic material for insulation board combines strength, lightness, and resistance to deterioration. Moreover, this sheathing is *double-waterproofed* to seal out damaging, job-delaying moisture . . . *outside*, by protective asphalt coating . . . *inside*, by special processing of the fibers. It provides *practical job advantages* unmatched by any other brand of sheathing.

For dependable, easily-applied, time-saving sheathing . . . be sure to specify Celotex *Double-Waterproofed* Insulating Sheathing.

For better building insulation... specify genuine

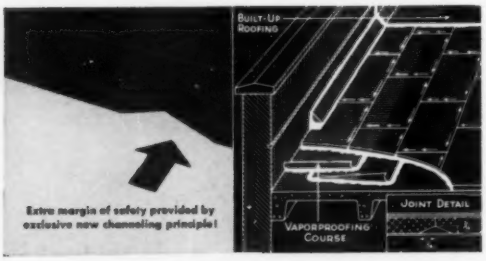
CELOTEX®

*REG. U. S. PAT. OFF.

INSULATING SHEATHING

The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Illinois

These Celotex Insulation Products Can Simplify, Improve, Cut Costs, On Your Construction Jobs!


BUILT-UP ROOFING
Extra margin of safety provided by exclusive new channeling principle!
JOINT DETAIL
VAPORPROOFING COURSE

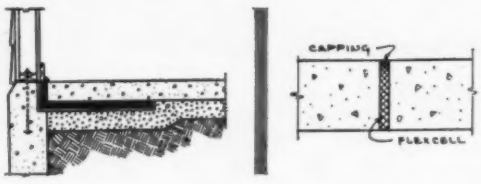
CELOTEX CHANNEL-SEAL ROOF INSULATION

New safeguard against blistering, and separation of felt and insulation! Units form network of channels to permit equalization of air pressure throughout roof area. Asphalt-coated on both sides, all edges. Rigid, tough, yet light, easy to handle. Coated surface assures positive bond to both roof deck and roofing felt. Thicknesses for every job specification.

FLEXCELL* Bituminous Impregnated Cane Fiber Board

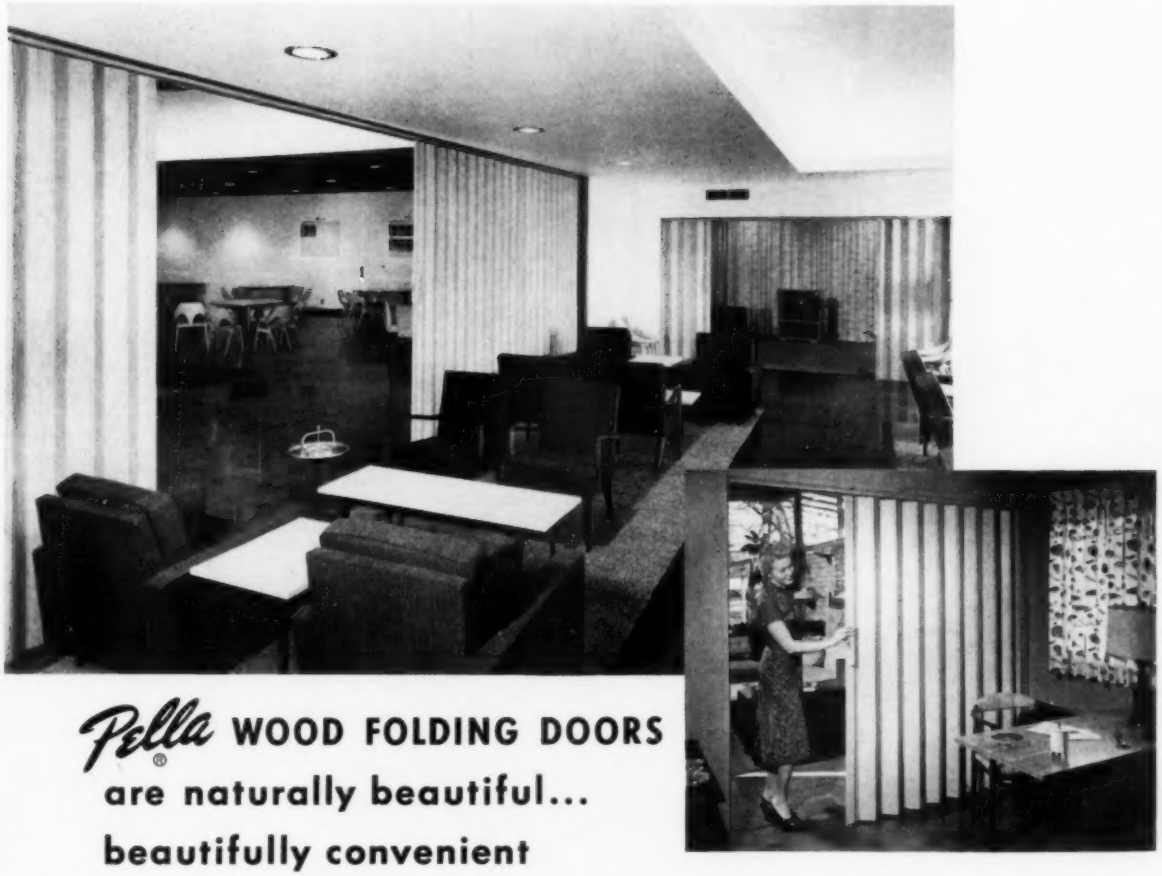
As PERIMETER INSULATION, Flexcell contributes toward a warmer concrete slab floor by reducing possibility of heat loss through floor edges.

Write Now for full data on various types of job-proved Celotex Cane Fiber Insulation:



As EXPANSION JOINT FILLER for driveways, walks, curbs, and gutters, Flexcell expands and contracts with concrete slab—is not affected by temperature changes . . . does not extrude, is maintenance-free!

THE CELOTEX CORPORATION • DEPT. AR-36 • 120 S. LA SALLE ST., CHICAGO 3, ILLINOIS



Pella® WOOD FOLDING DOORS are naturally beautiful... beautifully convenient

Richly veneered in oak, pine, birch or Philippine mahogany... the natural wood grain beauty of PELLA DOORS enhances your designs, blends perfectly with woodwork and furniture.

Used as room dividers, PELLA DOORS make space much more flexible, create extra rooms instantly in homes, churches, schools, hospitals and offices. Use these folding doors to give ready access to closets and storage walls in hotels and motels without sacrificing floor or wall space.

PELLA DOORS operate smoothly, too. They're spring hinged for easy opening and closing. Sturdily constructed with *solid* wood laminated cores, they're resistant to warpage and abuse.

Get PELLA DOORS in stock or custom sizes, finished or unfinished, factory assembled, complete with all hardware and concealing track mould. No costly fitting on the job. Mail coupon below today for more information. Or see our catalog in Sweet's Architectural File. Representatives throughout U. S. and Canada.

Pella® WOOD FOLDING DOORS

ROLSCREEN COMPANY
Dept. H-26, Pella, Iowa

Gentlemen: Please send FREE literature on PELLA WOOD FOLDING DOORS and name of nearest PELLA dealer.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

how you benefit today from the Kawneer Touch

The invention of resilient sash by the architect-founder of Kawneer, Mr. Francis J. Plym, revolutionized store front design. This was the foundation upon which Kawneer's expanding line of architectural products was developed and manufactured over its 50-year history.

The ability to put into these architectural metal products a certain "touch" has given Kawneer the opportunity to build products for all types of buildings. Today the greatly diversified line includes metal wall, flush doors, sun control products and other assemblies for big and little buildings, stores, offices, factories and schools. The Kawneer Touch offers you:

Eye-appealing metal finishes
—years of experience by skilled artisans are reflected in the lasting beauty of Kawneer products.

Large variety of stock shapes and models
—designed to be flexible and adaptable, yet retain design individuality.

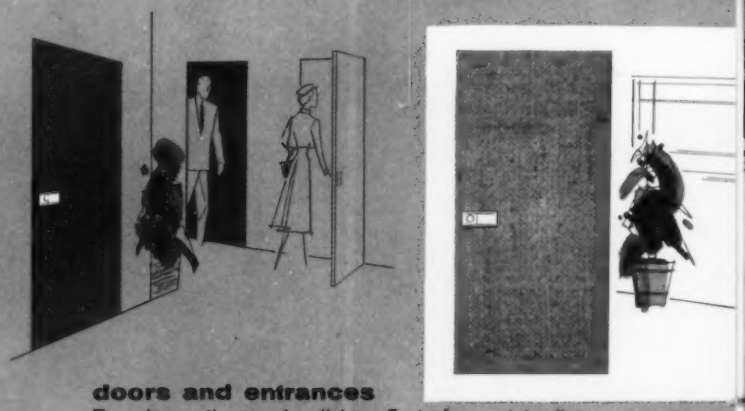
Precise engineering and production
—careful workmanship means less on-the-job erection time.

Continuous research and development
—always prepared to satisfy new architectural demands and needs.

"On-call" field representation
—over 110 representatives covering the nation and Canada, equipped through education, training and experience to assist you with any application problem.

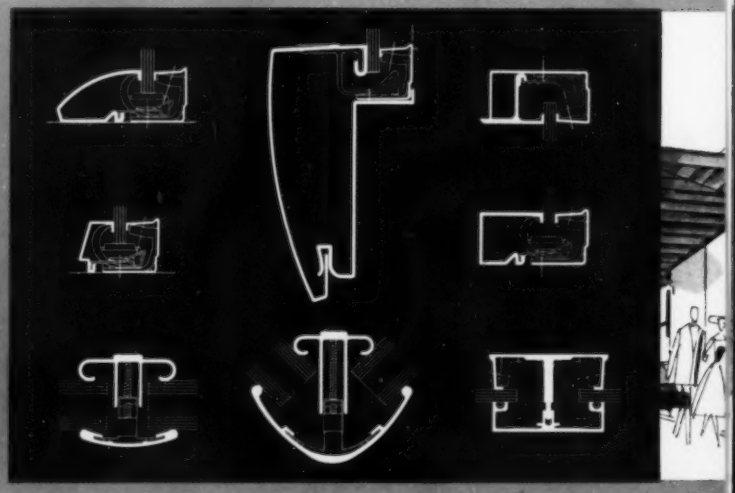
Factory-trained dealer organization
—ready to serve with adequate inventories, prompt deliveries and skilled installation methods.

Nationwide network of factories and warehouses
—near your jobs to provide quick delivery to dealers, preventing costly delays.



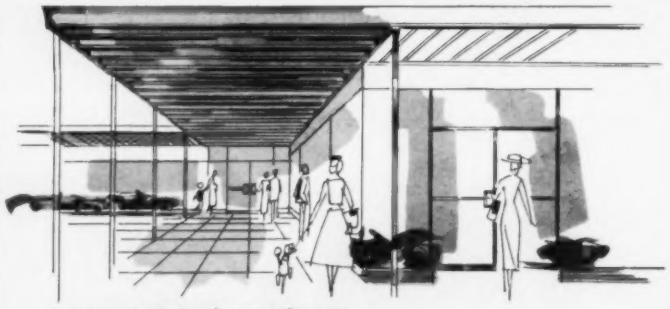
doors and entrances

To enhance the merchandising effect of an outstanding window display, Kawneer many years ago developed entrances that would invite the public to enter. Today the epitome of doors and entrances has been developed. Kawneer's narrow-stile, all-welded aluminum doors and shop-prefabricated interchangeable hardware . . . an exclusive innovation . . . enables complete flexibility and individuality of design.



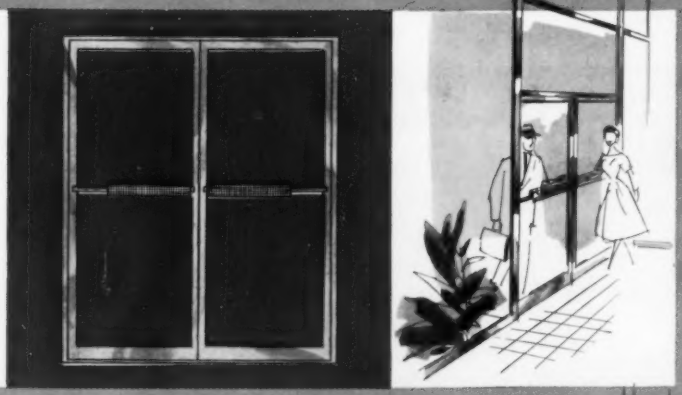
resilient sash

An apparent need for a sash that would "give" with the flexing of glass prompted the city architect of Kansas City, Mr. Francis J. Plym, to invent the first resilient sash. Since this time in 1906 many Kawneer sash assemblies have been developed and patented to provide you with a maximum variety of members from which to choose.



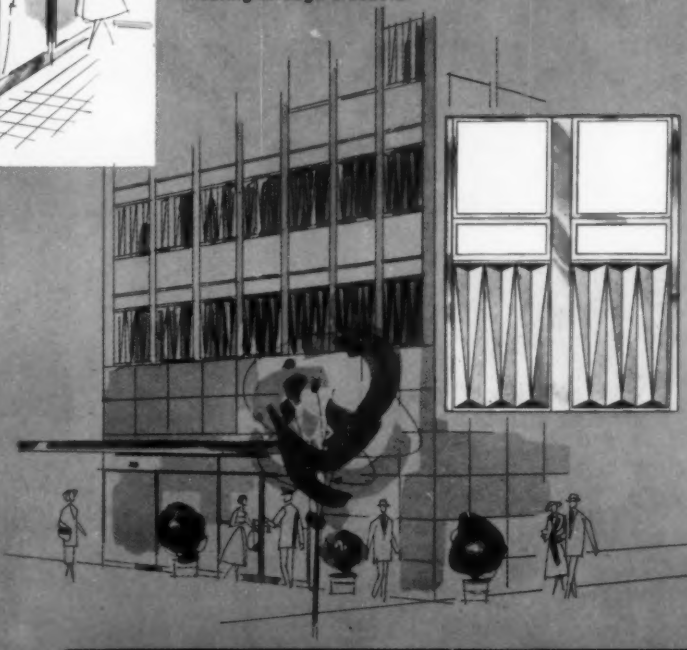
sun control products

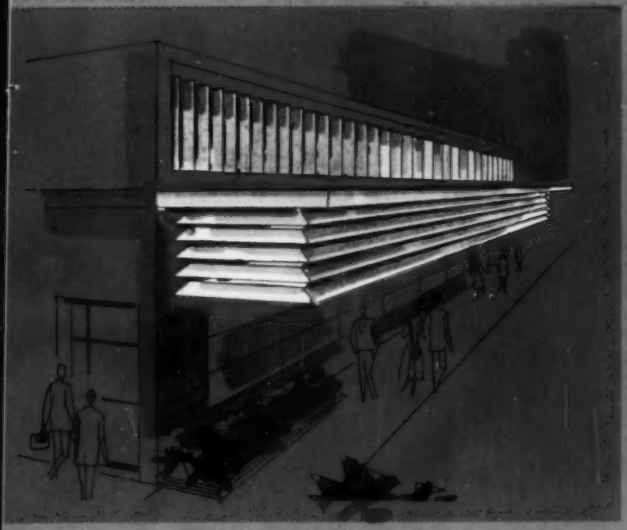
Rainy or blistering hot weather is an asset to the fortunate merchant who has protected his walk with a Kawneer Canopy. People run for protection, practically into his arms. Kawneer K-louvers, too, shield workers and students from hot sun rays and glare. Versatile and adaptable to all types of windows, buildings and latitudes, Kawneer Sun Control products are quickly erected and complement the building design.



metal wall products

A pioneer in the fabrication of aluminum for buildings, Kawneer furnished many famous structures with windows and spandrels. Today the skills and abilities that went into the windows and spandrels of the Mellon Institute, the St. Paul City Hall and Court House, and the Boulder Dam Power House are still at work furnishing modern structures with a complete service of "one responsibility," from engineering through erection.





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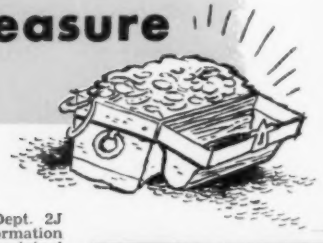

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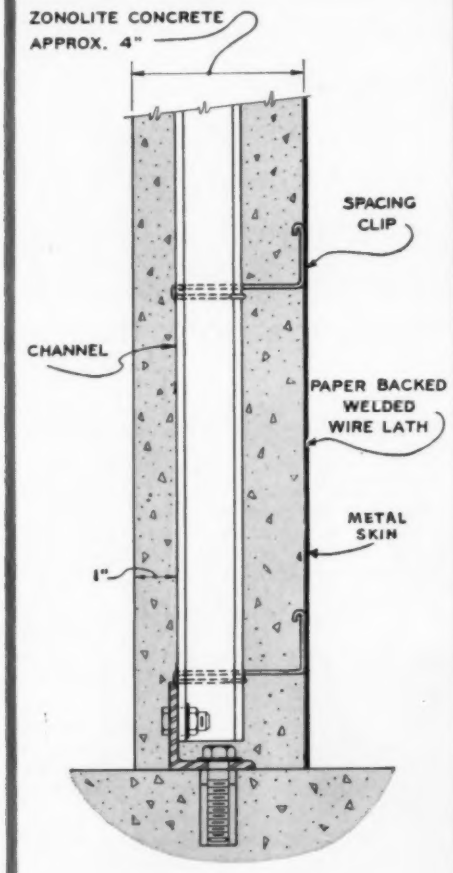
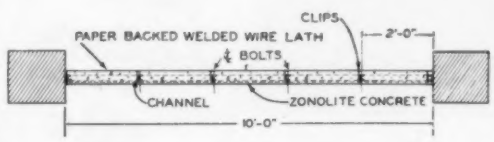


SPANDREL BACK-UP



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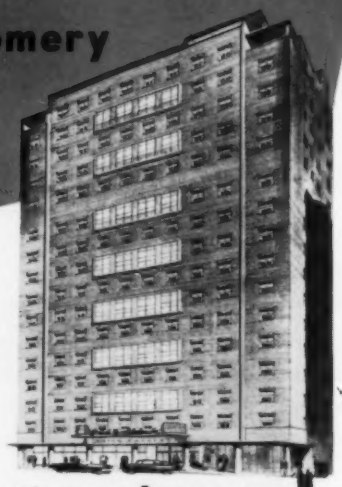

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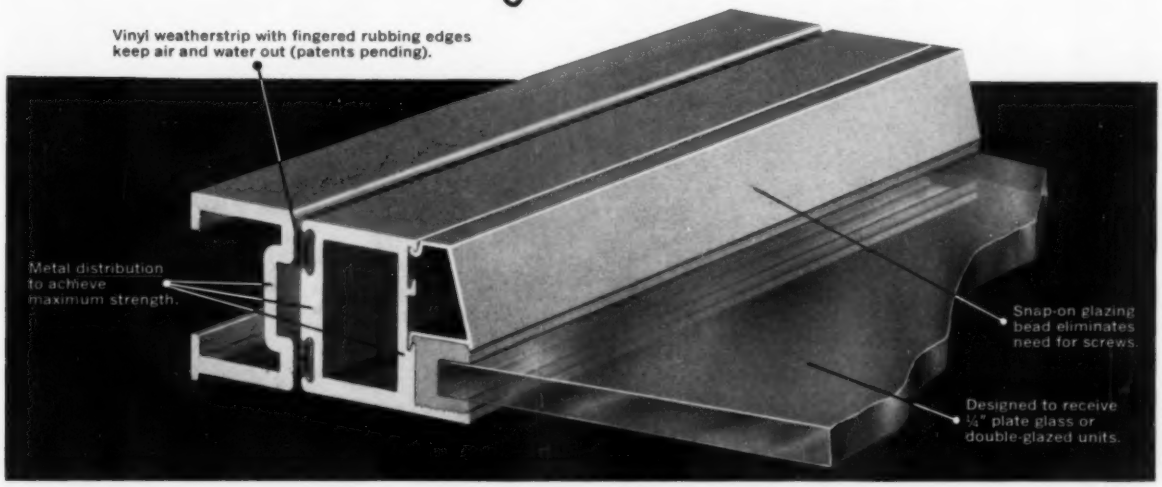
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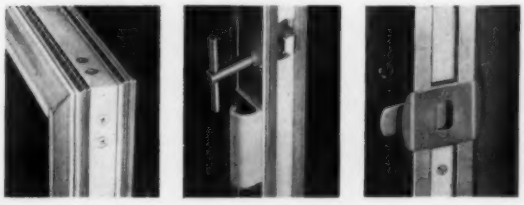

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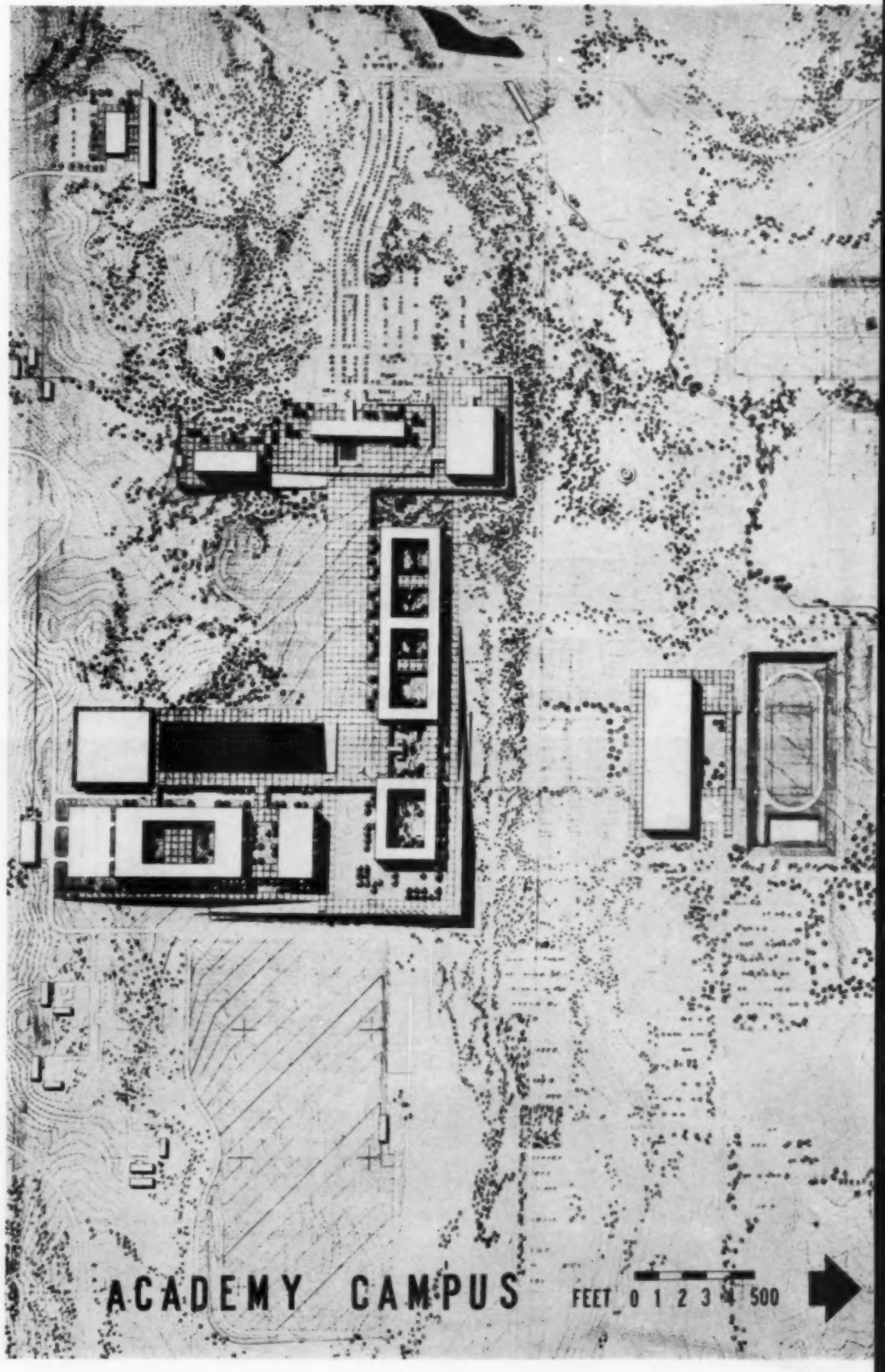
THE U. S. AIR FORCE ACADEMY

El Paso County, Colorado

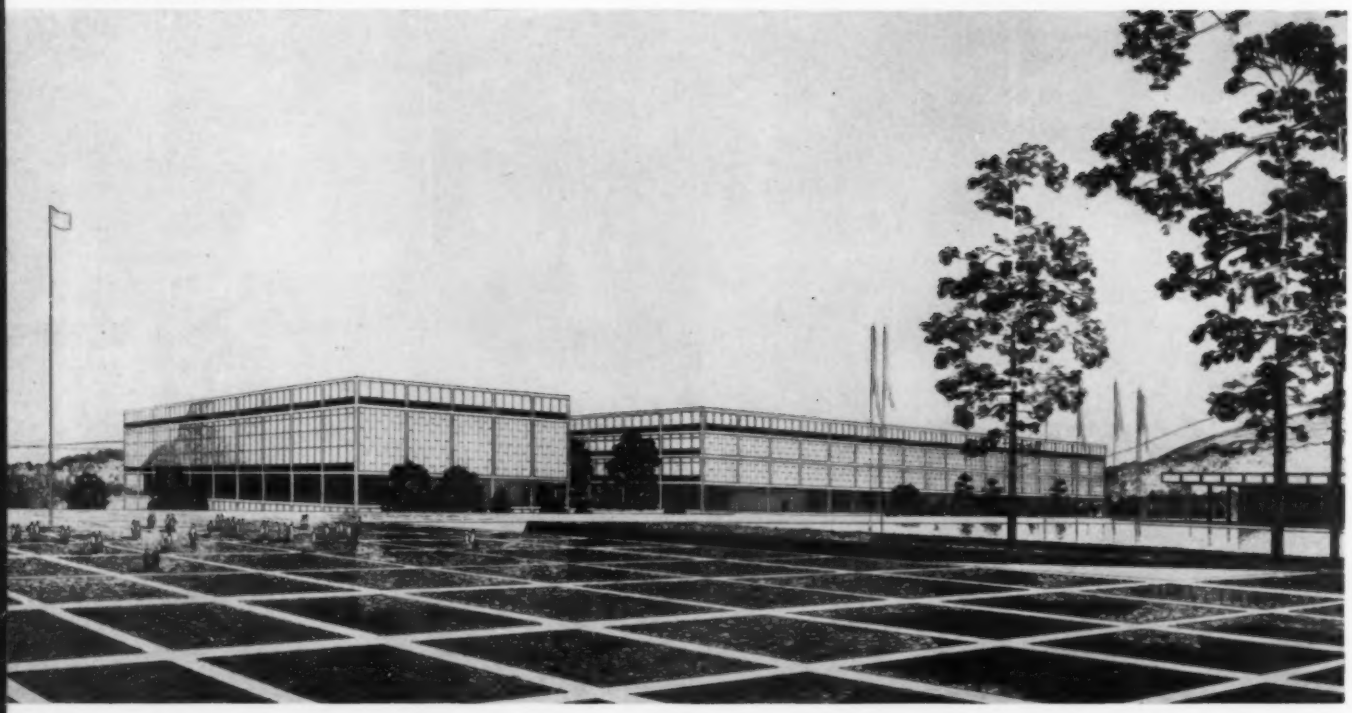
First photographs of revised designs as approved by Secretary of the Air Force Donald A. Quarles show little change in basic plan concept (AR, June 1955) but what the Office of the Secretary describes as "a great reduction" in glass areas. Congressional hearings will begin this month on the $57 million appropriation requested for Academy construction in the fiscal 1957 budget. Preliminary work of site preparation is going forward; contracts total $7 million already, are expected to reach $35 million by June 30

ARCHITECTS-ENGINEERS:
Skidmore, Owings & Merrill

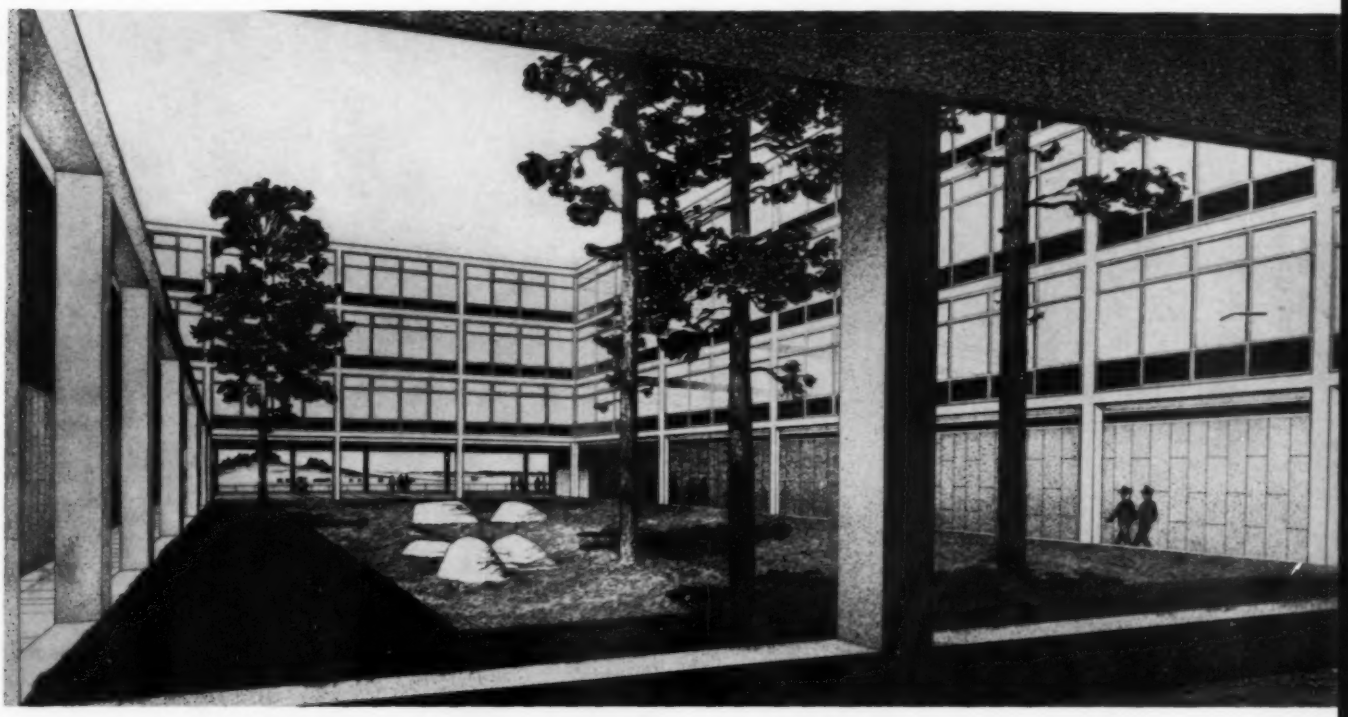
ARCHITECTURAL CONSULTANTS TO AIR FORCE SECRETARY:
Welton D. Becket, F.A.I.A.
Pietro Belluschi, F.A.I.A.
Eero Saarinen, F.A.I.A.



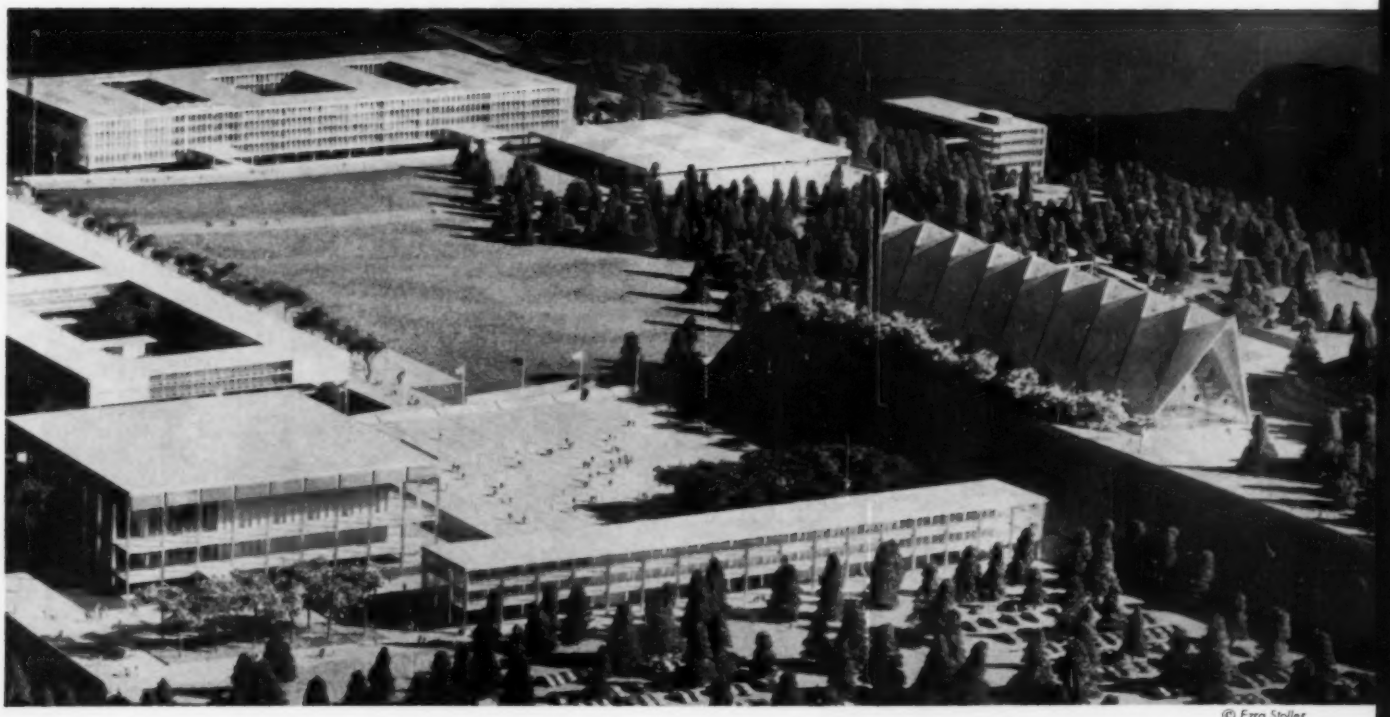
Photos of renderings by Edward M. Allen



Above: Library and Academic Building (view southeast from Cadet Quarters) are now separated by courtyard (across-page, top) open at two ends as well as above. In earlier scheme glass-enclosed galleries, to be used for circulation between buildings, surrounded court on all four sides



Below: photograph of original model released in May shows Cadet Academic Area, with Social Hall, Administration Building and the much-controverted Chapel (not yet redesigned) in foreground, Cadet Quarters at left, Library and Academic Building, Cadet Dining Hall at rear



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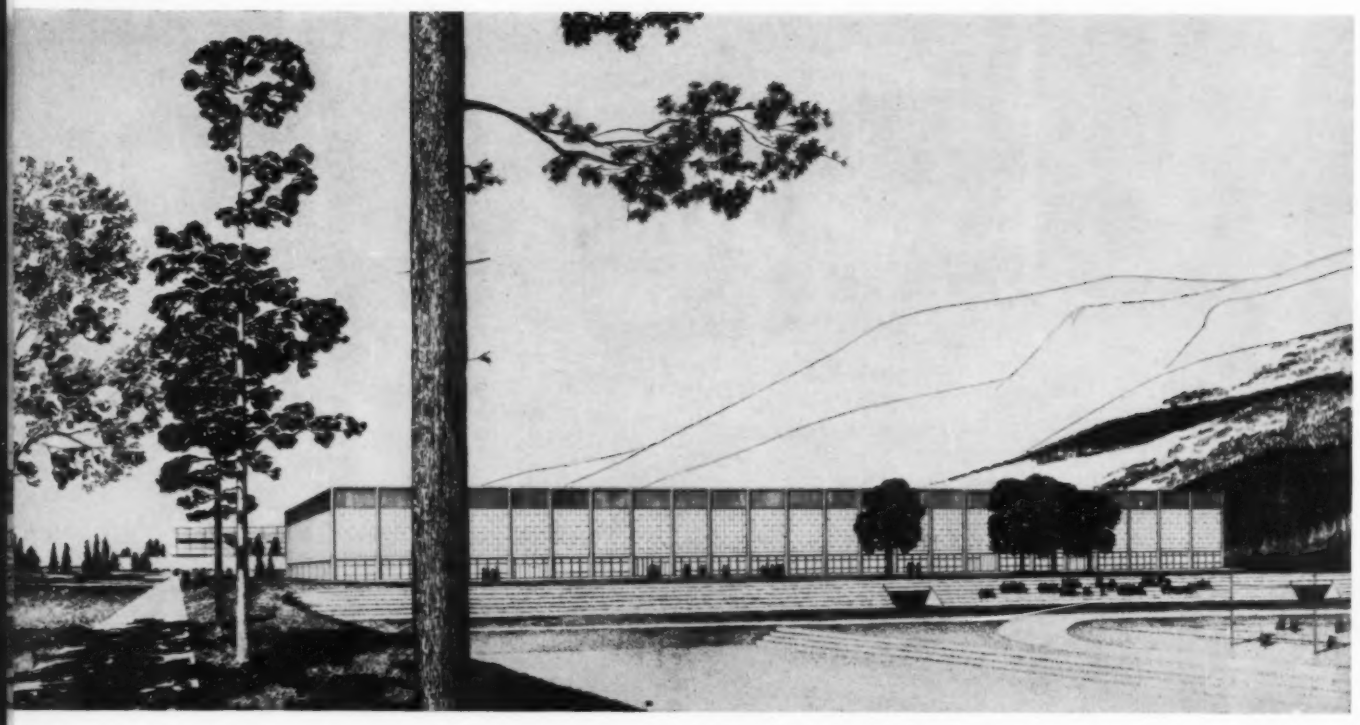
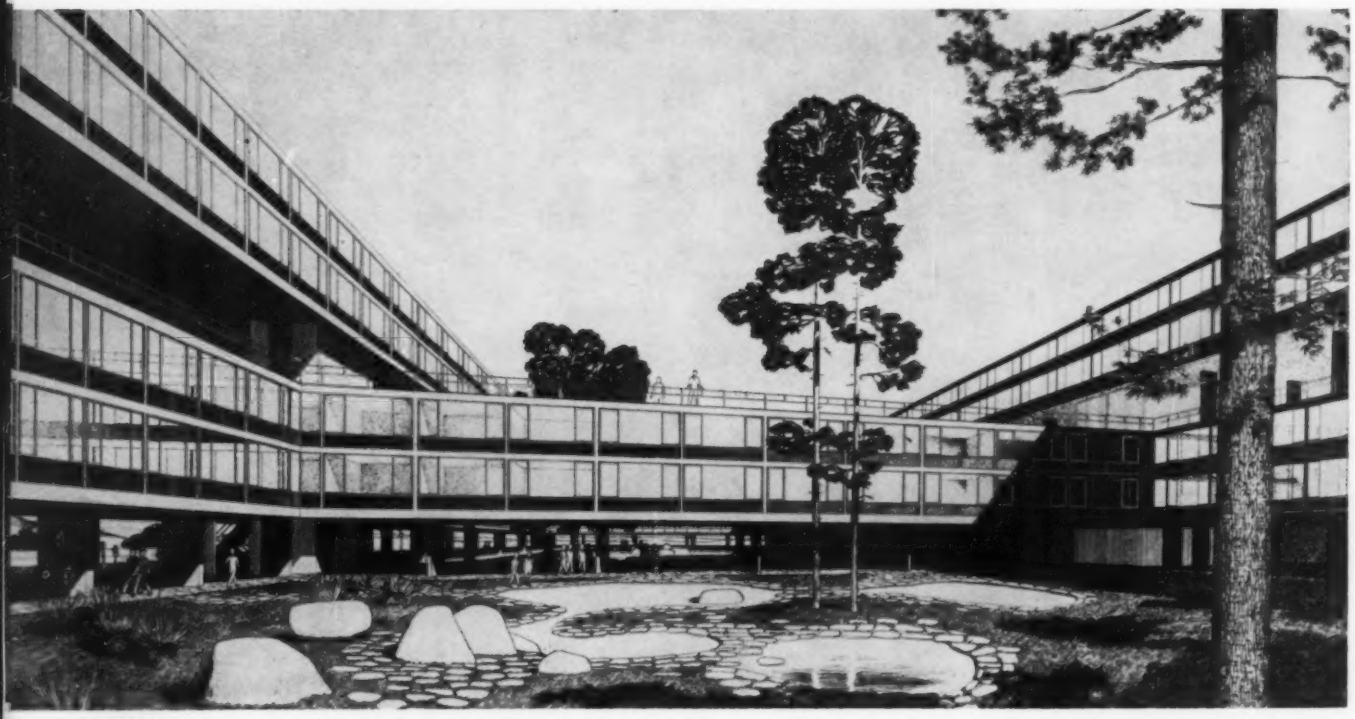


Above: Cadet Gymnasium presents much the same appearance as in the earlier version (the adjacent Basketball Arena had glass walls). Below: courtyard in Cadet Quarters (looking east). Full-scale mockups of basic cadet living unit — 300-sq-ft two-man room — are under construction



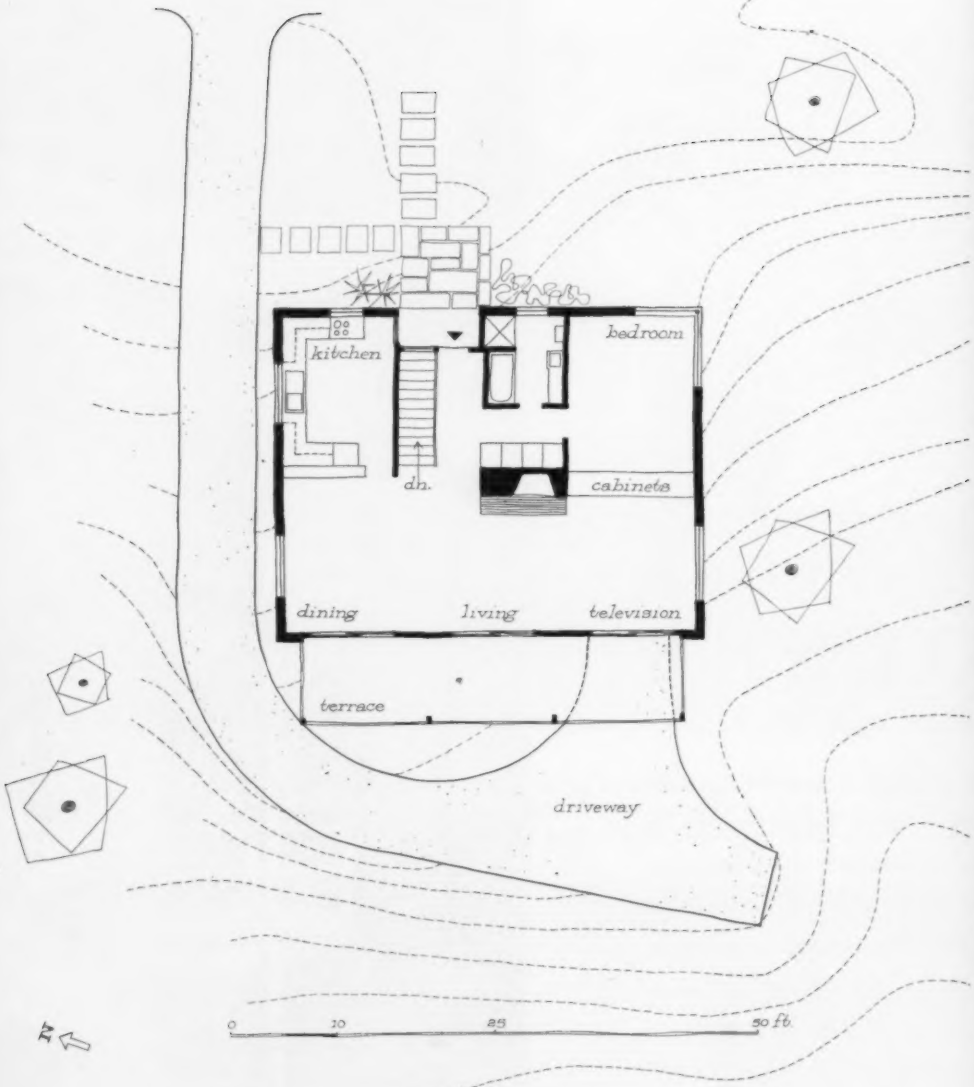
TWO-STORY HOUSES

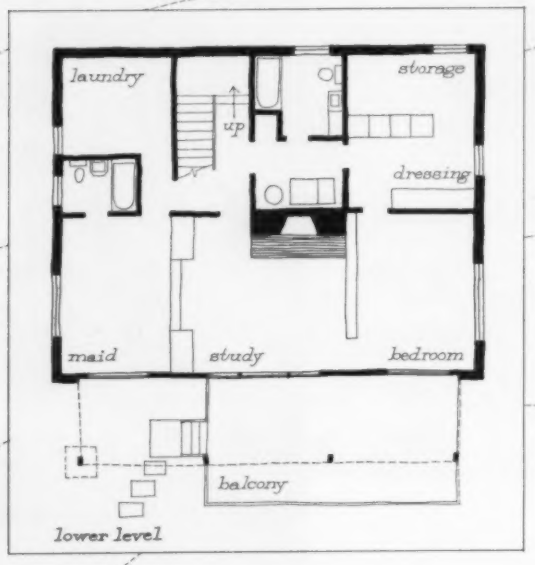
IN THE MIDDLE ATLANTIC STATES the two-story house has never lost its traditional popularity — or wavered, as a rule, from its traditional appearance. Yet here are five recently completed houses in that area which are anything but "traditional" in style and plan. All five were built on sloping and wooded sites and opened up to the view regardless of orientation; all five were planned with the main entrance and living area on the logical level, either upper or lower as the case might be. The old dignity of the two-story house remains, but the old planning inhibitions seem to be disappearing.

— Florence A. van Wyck

Robert C. Lautman

Robert C. Lautman





Miss Lilly Fox and
Mr. and Mrs.
Robert W. Hartley
Owners

WASHINGTON, D. C.

Harry E. Ormston, Architect

THE SITE OF THIS HOUSE is within the city limits of Washington; sloping steeply down from the street, it overlooks the Virginia hills to the west and (from the uppermost corner of the lot) the city and the Potomac River to the southeast.

The owners — a couple and the wife's aunt — moved to Washington from Portland, Ore. They particularly wanted a hillside site and put much emphasis on view and outdoor living space.

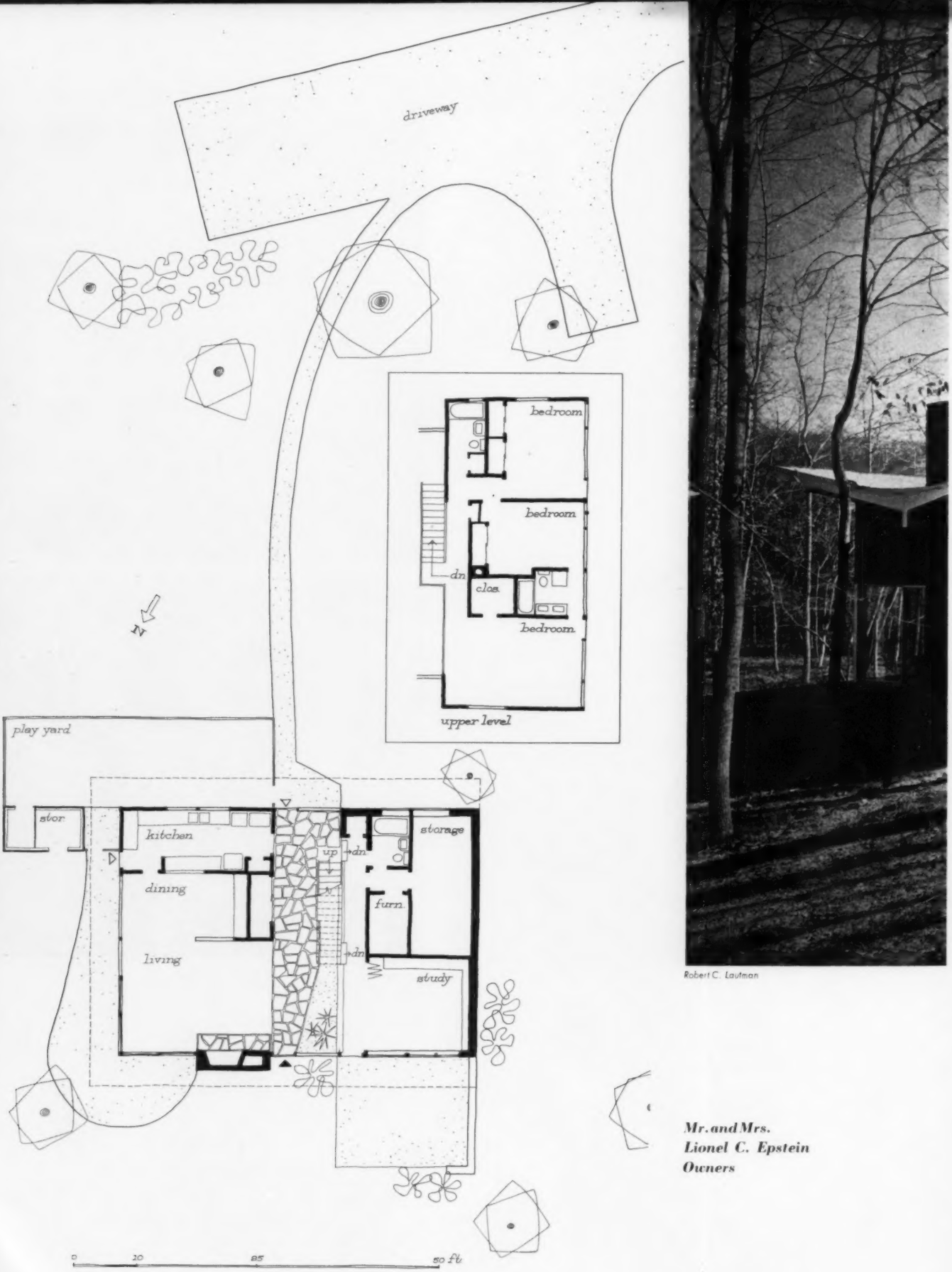
The house was planned as a compact rectangle with the chimney and utilities in the center. Miss Fox's suite is on the street level; from its corner windows can be seen the Washington Monument, the Lincoln and Jefferson Memorials, and the Potomac. Mr. and

TWO-STORY HOUSES: WASHINGTON, D. C.

Mrs. Hartley have most of the lower floor, including the balcony, to themselves. The two porches provide the desired outdoor living space and also give deep sun shade on the west (view) side of the house.

Construction is wood frame on cinder concrete block foundation. Exterior walls are used brick and stained redwood vertical siding; the single slope built-up roof has a marble chip surface. Interior walls are painted plaster and natural-finish birch plywood, floors are wood or asphalt tile. Sliding aluminum doors and screens and steel casements were used throughout. The house has both wall and roof insulation and is air conditioned. All cabinets and bookcases are birch plywood and were designed by the architect.

Robert C. Lautman



Robert C. Lautman

Mr. and Mrs.
Lionel C. Epstein
Owners

LANGLEY FOREST, VA.

Leon Brown and Thomas W. D. Wright, Architects

THE THICKLY WOODED SITE of this house is only some 25 minutes by car from downtown Washington. It overlooks a forest — obligingly to the north — and presented no privacy problems.

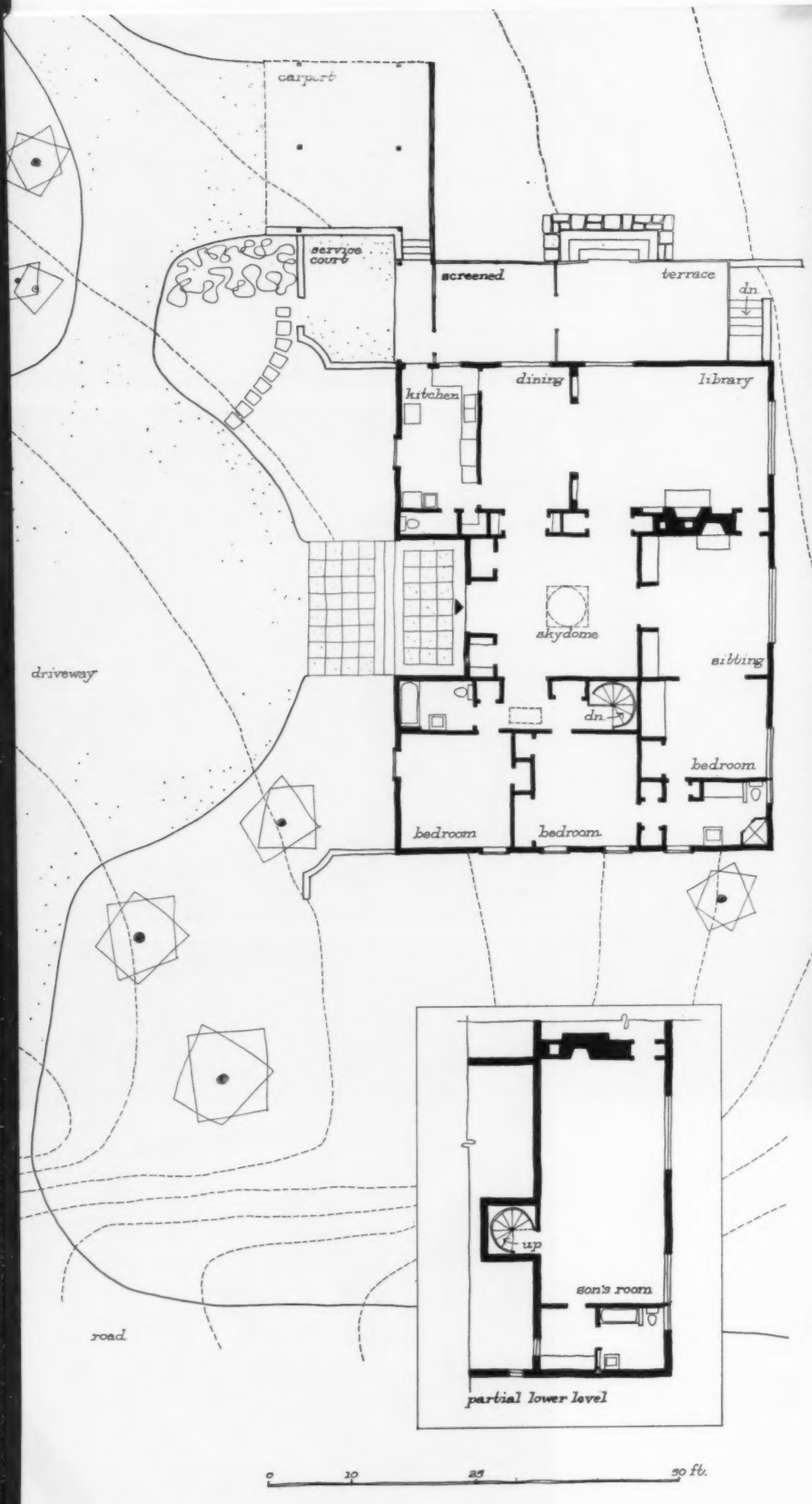
The owners' chief requirement (rather unexpectedly, perhaps, since they have two small children) was for "a single, modulated space for the principal parts of the house, not a segmented articulation of the parts." They also wanted "an intimate relationship with the surrounding land, treetops and sky." Some activity zoning obviously was necessary and was provided by the location of children's bedrooms and play space. The main part of the house, however, is really open: the entrance foyer on the lower level is 15 ft high and glass-

TWO-STORY HOUSES: LANGLEY FOREST, VA.

roofed; foyer, living and dining rooms, master bedroom and study form one huge area extending through and across the house on both levels when sliding partitions and folding doors are not in use.

The "intimate relationship" with the site which the owners requested is reflected in the roofline which exactly follows the contours of the land, the sliding glass doors which open one whole corner of the living room to the terrace, and the height of the living room ceiling which ranges from 10 ft at the inner edge to the 13-ft top of the exterior glass wall through which the treetops can be seen. Construction is wood frame with exterior walls of used brick and fir siding; interior walls and ceilings are sheetrock.

Robert C. Lautman



Joseph W. Molitor

Mr. and Mrs. Joseph E. Johnson
Owners

PRINCETON, N. J.

Victorine & Samuel Homsey, Architects

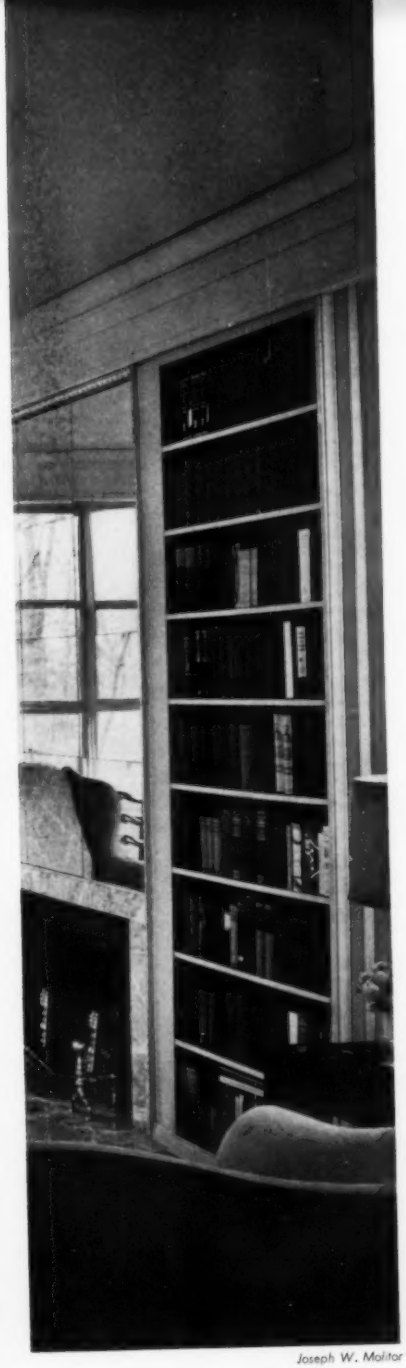
THIS HOUSE occupies part of an old Princeton estate recently cut up into building lots of about an acre each. The slope is to the south toward a ravine, a small stream and a pond.

The owners wanted a contemporary house which would provide a harmonious setting for their collection of antique furniture. They also required generous and well-lighted display space for paintings (Mrs. Johnson's brother is a portrait artist); a separate suite for their son; two guest rooms; and plenty of room for entertaining. They requested door and windows opposite each other, forming axes, and high ceilings and large rooms. They did *not* want an oversized dining room or an elaborate kitchen.

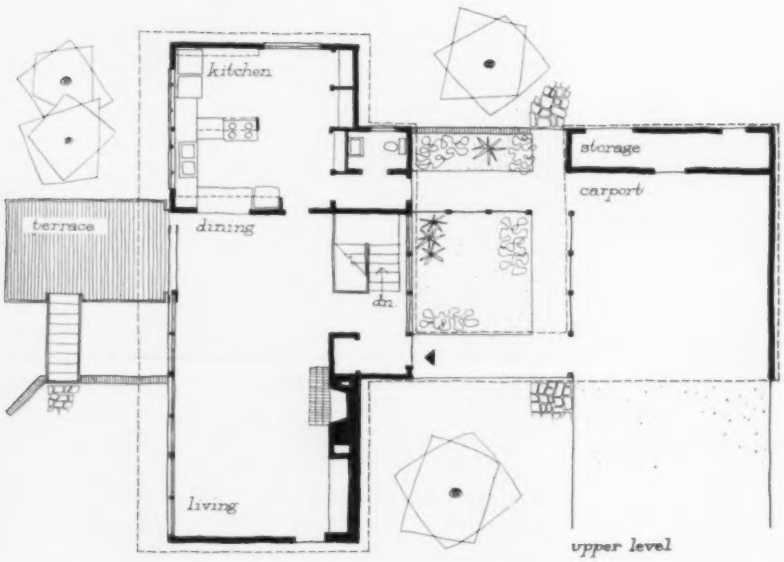
TWO-STORY HOUSES: PRINCETON, N. J.

The plan as developed revolves around a domed atrium to which all main rooms open; here extra tables and chairs may be set up for large parties, and here also there eventually will be wall frescoes and a central fountain. This large and airy hall keynotes the entire house: most ceilings are 10 ft high, and most rooms have at least one wall predominantly of glass. A circular stairway just off the hall leads down to the son's suite on the lower level.

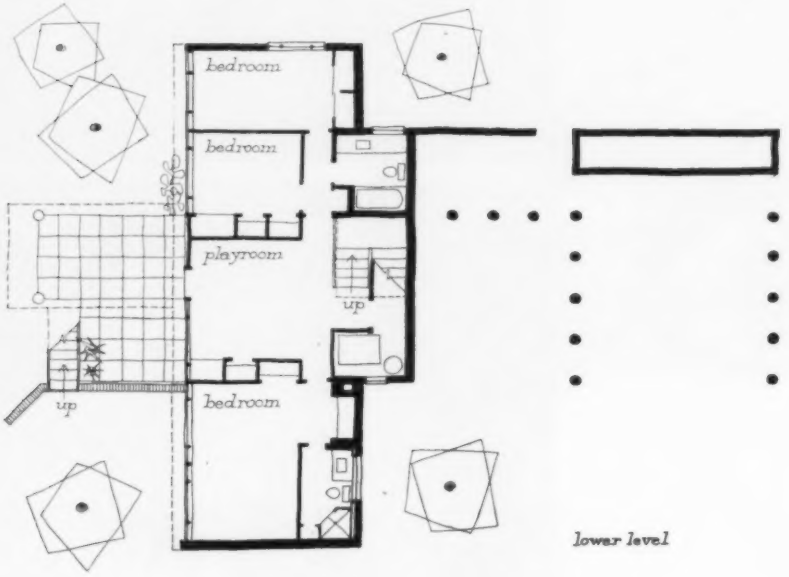
Construction is wood frame with a built-up roof topped by marble chips. Exterior walls are a soft pink brick with brown-gray trim. All interior walls are painted an antique white, and all ceilings except for the atrium are a clear blue.



Joseph W. Molitor



upper level



lower level

0 10 25 50 ft.

Robert C. Lautman

Mr. and Mrs.
Robert W. Komer
Owners

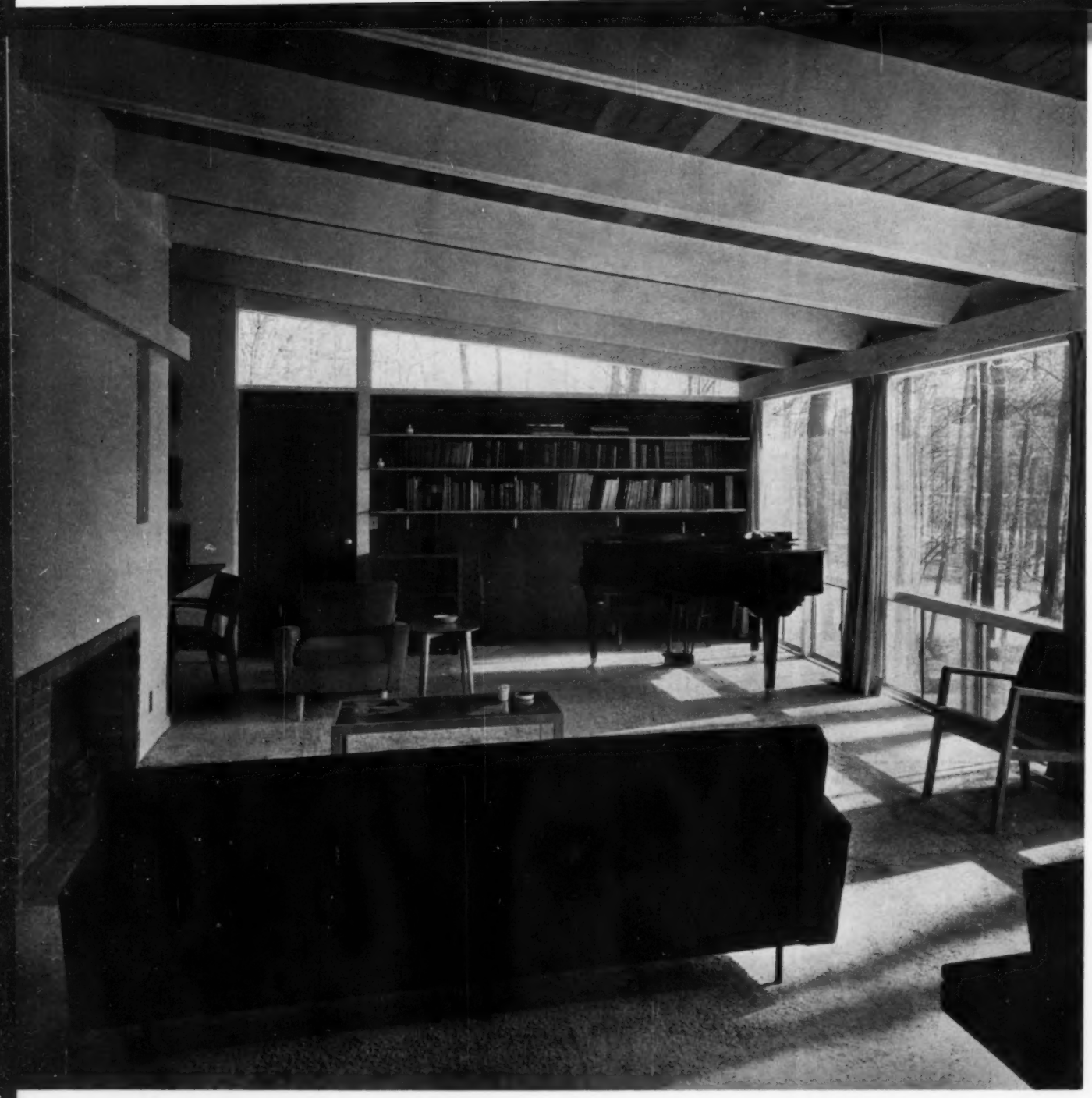
FAIRFAX COUNTY, VA.

Keyes, Smith, Satterlee & Lethbridge, Architects

EVERY ROOM in this house on the outskirts of Washington faces south toward a lake and has direct access to an out-of-doors living area — an open porch on the upper level, a terrace on the lower. The wide roof overhang and the set-back of the lower floor reduce summer sun penetration without limiting the view and permit the south walls to be largely of glass.

The owners have two small children for whom they specified separate bedrooms and bath and a large play area. They also requested "a generous kitchen where everyone could get together," but had no other special requirements.

The plan was worked out as economically as possible since the budget was limited, but good circulation was



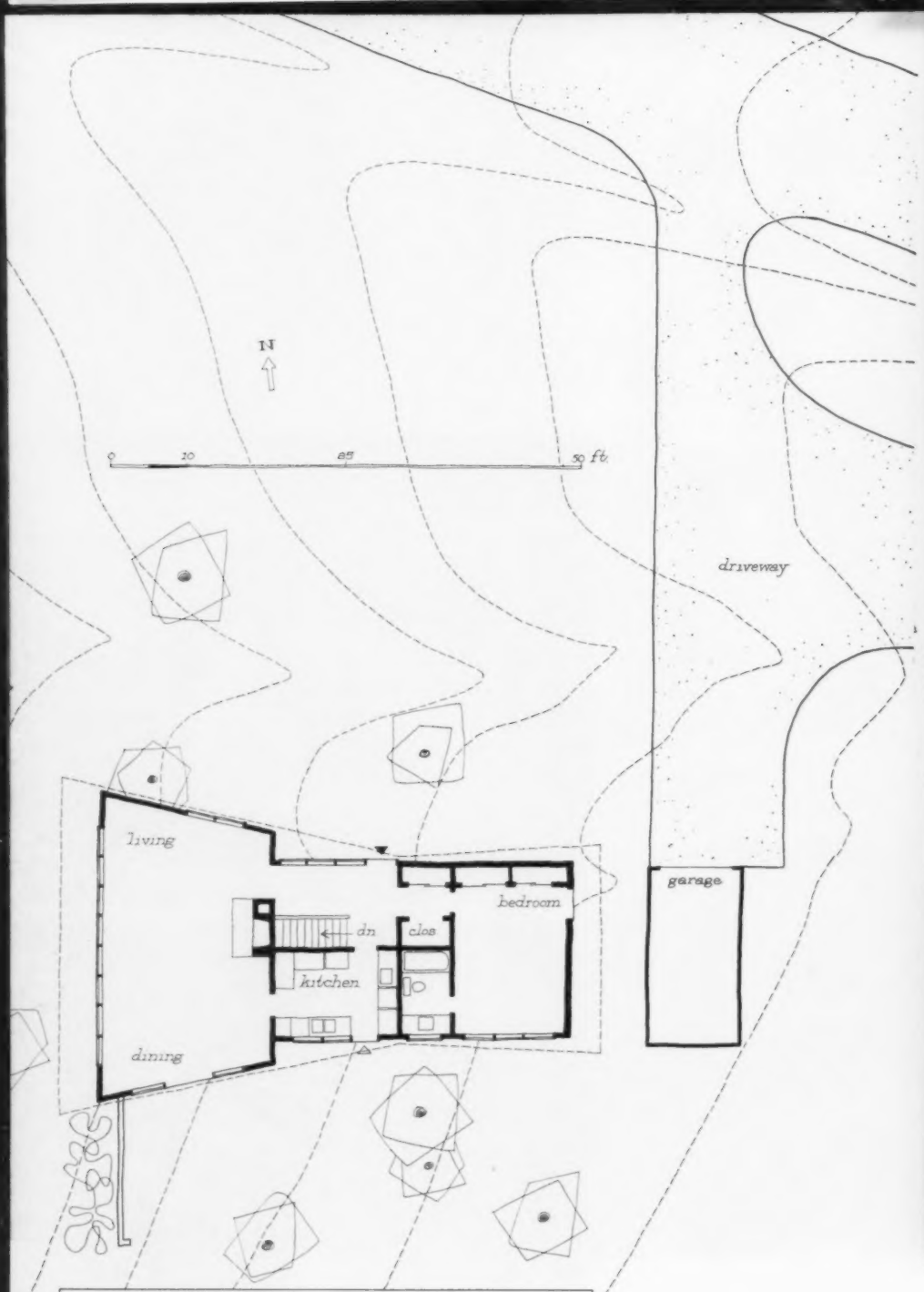
TWO-STORY HOUSES: FAIRFAX COUNTY, VA.

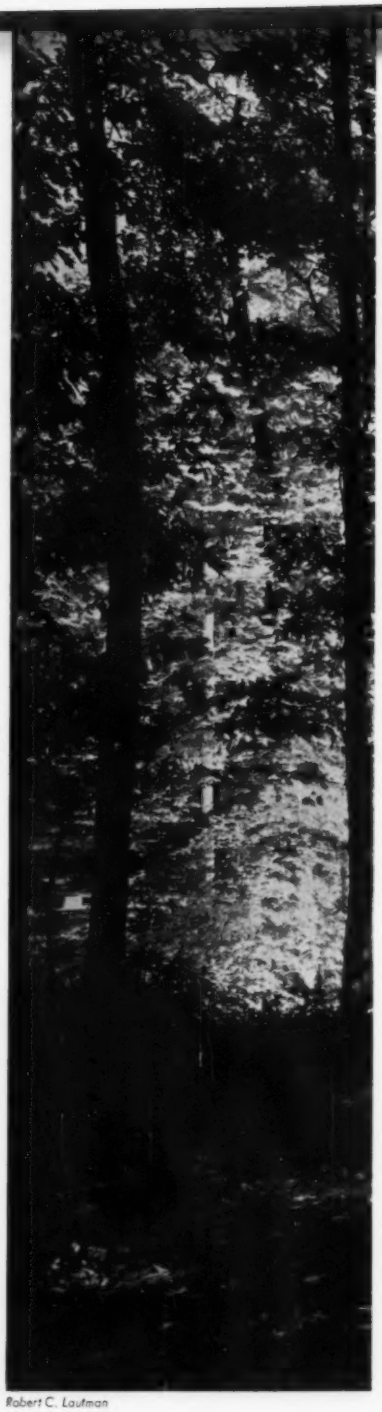
achieved throughout. The stairs down to the bedrooms are adjacent to the main entrance; the kitchen has a service entrance facing the carport; and only the playroom is subject to cross traffic.

Although the budget precluded much special detailing, some cabinets were built in and a two-chair desk was provided next to the fireplace in the living room.

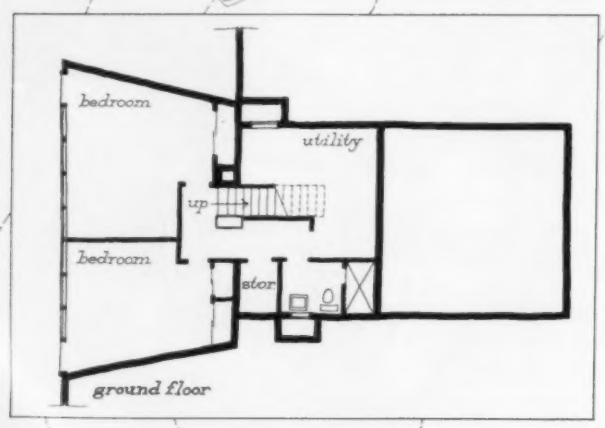
The budget also influenced the choice of construction materials: interior walls are plaster, ceilings are exposed plank or plaster, floors are oak or asphalt tile except for brick in the entry; exterior walls are used brick and vertical T & G siding, painted; the roof is 2 by 6 fir plank and beam. Framing is wood, on a concrete block foundation. Sash are sliding aluminum.

Robert C. Lautman





Robert C. Lautman



Mr. and Mrs.
Verl E. Roberts
Owners

Lou Bernard Voight
Landscape Architect

BETHESDA, MD.

Charles M. Goodman Associates, Architects

THE VIEW toward which this house is oriented is downward through the woods to the west. The western exposure was no problem at all: the trees are so dense the leaves provide all the sun control needed from early spring through fall, and for the balance of the year the sun is welcome.

The main planning requirement was for two guest rooms well segregated from the rest of the house. Since the owners wanted their own personal living accommodations all on one floor, the guest rooms were placed on the lower level. The master bedroom has complete privacy — and unusually generous storage space: Mr. Roberts is "quite a hobbyist," the architect says. All three bedrooms open directly to terraces.

TWO-STORY HOUSES: BETHESDA, MD.

The house was planned to fit gently into the woods and landscaped to emphasize the forest site. Tanbark pads and wildflowers are scattered naturally among the trees, requiring little care (the owners stressed easy upkeep for both house and grounds), but providing a very pleasant outlook from the living room.

Construction materials also reflect the character of the site. Exterior walls are fir, painted; interior walls are cedar paneling or plaster, and floors are 2¼-in. white oak strip. Framing is wood on concrete footings and brick and cinder block walls. Roof is built-up tar and gravel. The house is thermally insulated with fireproof cotton blanket, but not air conditioned. Windows are steel casement.

Robert C. Laufman

Sociology and Architecture

By Professor Charles Madge

University of Birmingham (England)

". . . architecture and sociology have to try to be 'realistic' . . . they have, I think, managed to maintain their point of view that social man includes but extends beyond economic man and that building includes but extends beyond engineering."

A paper read before the Royal Institute of British Architects and reprinted from the R.I.B.A. Journal

FIRST I SHOULD LIKE to pay homage, as a non-architect, to the profession of architecture. Other people have pointed out that the architect is both scientist and artist, and also he must be something of a politician and a man of affairs. I really believe that the architect in our time has a better chance of being a whole man than most. When other occupations are in general becoming more one-sided, architecture is becoming more many-sided. One only needs to look at the curriculum of the schools of architecture to see that this is so. You find there aesthetics and mathematics, physiology and sociology, the study of materials and structures, the practice of design and the history of design; and all this is tested against the realities of costing and that special branch of human relations which consists in the relationship between architect and client.

Architecture, I believe, is riding trimly on the crest of the wave of urban industrial civilisation and is flourishing in that civilisation at a time when institutions are ossifying and arts are wilting. I am sure this is because it is based on human many-sidedness. One might suppose that mastery of so many kinds of knowledge and skill must lead to one of two things — dilettantism or a nervous breakdown. I honestly believe that there are very few dilettanti in the profession, and, so far as I know, very few nervous breakdowns. There is on the contrary a great deal of work done and a great deal of work satisfaction. I feel fairly sure that the creative nature of the work supplies the architect with an energy that other occupations do not tap.

Among the subjects which architects are interested in is sociology. I realize something of the extent to which it has impinged on you already, both in the schools of architecture and in the professional journals. A whole generation of architects was brought up on the works of one sociologist in particular, Lewis Mumford, and especially on his book *The Culture of Cities*. The spreading out of architectural interest from churches and palaces to the urban environment as a whole has inevitably brought architects face to face with one social dilemma after another. Moreover, architects have turned to sociologists for help in these problems. I myself have had the stimulating experience of collaborative work with architects. What American sociologists would describe as the interaction that has taken place between architecture and sociology has indeed led to some disillusionment on both sides. I do not think we need to regret this, because the shedding of illusions is in general a good thing, provided always that it does not lead to a neglect of what is left after the illusions have been shed. I, too, have been disillusioned. That is why I think you can take my tribute to your profession as a genuine tribute, not based on idealisation or wishful thinking.

Cave drawing. Marching warriors. Cingle de la Mola Remigia, Spain

Architecture is concerned with many other branches of human knowledge besides sociology. And sociology is concerned with many other aspects of human activity besides architecture. Here I want to consider Sociology as a whole and Architecture as a whole and to see what they may have in common. This I think, will be less tedious than a detailed survey of sociological information, or of methods for getting information that might be useful to an architect.

The word 'sociology' was first coined something more than a hundred years ago by Auguste Comte. His conception of society is summed up in a sentence from Pascal which he quoted as a motto: "The whole succession of men, during the long series of ages, should be considered as One Man, who continues to live and who continually learns." This is reminiscent of a phrase in a book by Marx about "the activity of a whole series of generations, each one standing on the shoulders of those preceding it." Within this vivid image of social continuity there lurks another, that of society as a building. In the same way, the Christian Church is visualised both as a lofty cathedral and as the body of the elect. In the sociological writing of our own time the images of structure, framework and pattern are constantly being invoked. One might almost say that sociologists are trying to discover the architecture of society.

Society is, of course, an odd sort of building in that it is constantly being rebuilt. It is always possible that it stands on the site of other buildings which have disappeared. It certainly incorporates old materials put to new uses, and its construction represents a continuous compromise between past and present needs. It is, however, to my mind essential to consider it as a unity both in space and time: as the combined and cumulative performance of the human species during its history. To quote Aristotle, whom I would call the real originator of sociology as of so much else: "Just as in discussing a house, it is the whole figure and form of the house which concerns us, not merely the bricks and mortar and timber; so in natural science (he could have said, also in social science), it is the composite thing, the thing as a whole, which primarily concerns us, not the materials of it, which are not found apart from the thing itself whose materials they are."

Although Aristotle is here emphasising the importance of the whole, these words are from the introduction to his biological treatise, *De Partibus Animalium*, on the parts of animals. He is really telling us that unless we are prepared to make a patient study of details, that is to say of separate parts and their interrelations, we shall never rise to a proper conception of wholes. He is in fact advocating the scientific attitude, and some words from this passage are quoted with approval by Robert Boyle in his book *Of the Usefulnesse of Natural Philosophy*. I must not get too caught up with Aristotle, but I cannot resist recalling to you the story which he tells at this point in order to emphasise that nothing is too mean or lowly for science to investigate: how some visitors once wished to meet Heracleitus, the early Greek philosopher, and when they came to call and saw him in the kitchen, warming himself at the stove, they hesitated; but Heracleitus said, "Come in; don't be afraid; there are gods even here."

Both sociologists and architects must be prepared to find gods in kitchens, and indeed a kitchen would make a good mutual rendezvous. A sociologist, or an architect, who considers such an area as unworthy is, I would suggest, not to be trusted with the larger and grander tasks. There is indeed one view of the function of sociology which regards it, in the words of Karl Popper, as being no more than "piece-meal social engineering." Anything more ambitious is regarded as dangerous to individual rights and the open society. I do not agree with this; I think that the sociologist should have large views and should start from a sense of history and historical movement. This need not involve the vices of what has been labelled as "historicism," or a belief that certain trends in the past must inevitably be projected into the future. There is nothing inevitable where human destinies are concerned. But we must surely be capable of rising above the mass of piecemeal detail, of seeing beyond our noses, of seeing both the wood and the trees. I feel that many architects will understand what I mean when I say that what we most need nowadays is people who have genuinely large views and also a genuine feeling for detail, which means a first-hand experience in as many different contexts as possible.

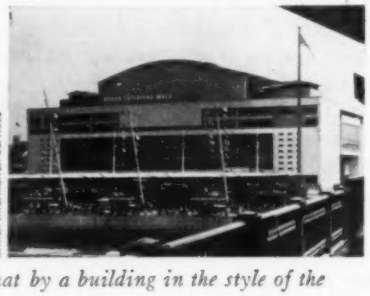
The important thing here is an adequate time-scale. I claim no originality in pointing out that while the history of mankind is thought to date from between 500,000 and 250,000 years ago, settled agriculture probably dates from only 10,000 years ago, the earliest towns from 5000 or 6000 years ago, and the industrial type of town which now dominates the scene only dates from about 250 years ago. Reverting to the metaphor of society as a building composed of generations standing on one another's shoulders, this means that the industrial turret in which we stand is at most about one-thousandth part of the whole, measured on a time-scale. At the same time, we must also remember the extraordinary increase in the total population of the world during these past 250 years, and also that it is only during that time that all the areas and peoples of the world have become an interdependent whole. It is this last one-thousandth part of human history which dominates us; and its dominant feature is industry.

"When the old St. Paul's Cathedral was destroyed . . .

. . . a splendid but quite different kind of building took its place . . .

British Information Services

. . . But no one, I think, wants to pull down Westminster Abbey . . .



British Information Services

. . . and replace that by a building in the style of the Festival Hall."

Our great industrial achievement is based on economics and engineering. These involve what is sometimes called a "realistic" approach to the environment and its problems. A realistic approach is, as a rule, a simplified approach. *Realpolitik* is a form of politics which considers certain kinds of force as more real than others. Economics in practice considers certain kinds of good as more real than others. Engineering in practice considers certain kinds of function as more real than others. To sociologists and architects, reality is considerably more comprehensive, though we do well to recognize the potency of economic forces and of their ally, the engineer. Indeed architecture and sociology have to try to be "realistic" in order to make their way in the present century. As a result they have, I think, managed to maintain their point of view that social man includes but extends beyond economic man and that building includes but extends beyond engineering.

I want to contrast what I consider a right view and a wrong view about the changing standards and values of human history. I can illustrate this either sociologically or architecturally. In architectural history, tastes have changed so that, for instance, at a certain stage of development gothic architecture was no longer esteemed and its place was taken by classical and baroque. When the old St. Paul's Cathedral was destroyed, a splendid but quite different kind of building took its place. But no one, I think, wants deliberately to pull down Westminster Abbey and replace that by a building in the style of the Festival Hall. That must be because the aesthetic and moral conceptions of the builders of Westminster Abbey have significance for us alongside of those of the architects of St. Paul's and the Festival Hall. In the same way we inherit from the Middle Ages the feudal values of nobility, gentleness and honour. We do not want to construct any more feudal systems, but some of the values that arose from them have an endurance beyond the power-structures of the past.

I say, some of the values. We can no more accept the past as a whole than we can reject it as a whole. We are constantly struggling to escape from the past, and I am of one mind with those who view with horror the insidious infiltration of false imitations of the past into the present. In sociology, this can be defined as snobbery; in architecture it is the fake antique.

We all recognise that in some ways children are more attractive than adults. They impress us as more spontaneous, affectionate and imaginative. The innocence of the young has seemed more striking as civilisation has become more hard-boiled and chromium-plated. These values of spontaneity and innocence we select from others less appealing. It is possible to see, for example,

Jade water buffalo. Chinese, 10th c. Courtesy Metropolitan Museum of Ar

in the child the unmitigated effects of original sin; destructiveness, aggressiveness, self-centeredness, unlimited greed. Yet the balance which happy children reach between good and bad has a simplicity which adult compromises lack. In the same way, it seems to me most probable that mankind reached its happiest stage of balance when the first miseries of the fight with nature were overcome and before human groups had begun struggling among themselves for wealth and power. What I have seen of tribal villages in India and peasant villages in Siam has confirmed this idea of mine that there really was once a golden age of primitive felicity. But I am also sure that this was no natural state of affairs: it represented an early victory over nature, both physical nature and human nature. This early victory was not permanent, and mankind has had to renew the fight again and again, every time on a new plane of complexity.

We cannot revert to the first golden age of agriculture, any more than we can avoid the process of growing up. We have to accept those two great social and technical inventions, the town and the factory, which together have so rapidly changed the world and made it what it now is.

What, then, are the right view and the wrong view about our changing values? The wrong view, I am suggesting, can take the form either of iconoclasm or of snobbery: essentially it consists in a failure to distinguish the values themselves from the conditions which generated them. The only conditions that are relevant to us are our own conditions. But many values which arose under quite other conditions have an independent and autonomous meaning for us. So in order to have a right view about the past we have a double task. First, we have to understand and appreciate our own conditions. And second, we have to recognize and perhaps reinterpret those parts of our heritage from the past which have a persisting value.

In terms of architecture this means, of course, that while our own architectural style should fit the conditions of our own time, yet structures built under other conditions may still speak to us in a language which we can poignantly understand, without necessarily believing it to be timeless or eternal or outside this world altogether in the Platonic sense.

The conditions under which we live, economic, technological, political, are changing fast and the change has every appearance of being uni-directional and irreversible. In a sense, technology, or the power of man over physical nature, is at the root of all of this. In Marxist terms, the forces of production produce the social relations of production and these in turn produce beliefs and ideologies. But changes in social relations are slower than changes in technology, and changes in belief are slower still. These are like a series of cogwheels each larger, and therefore revolving more slowly, than the last. I believe myself that there is a sense in which social and political change depends on technical and economic change and that changes in ideas, especially in moral and social attitudes, depend in their turn on the social and political trend. Like most sociologists I accept the view of Max Weber that most important systems of ideas have their own autonomous development. The degree of autonomy may vary. In the case of aesthetic styles and in all questions of taste, I believe the degree of autonomy to be very high — which does not preclude, of course, all sorts of interesting connections between aesthetic developments and other contemporaneous developments.

If the arts did not have an autonomous value, how is it that we can be moved by productions as far removed in time as those of the Stone Age, as far removed in space as those of China and Japan? The impression is instantaneous, even though it may take us time and patience to learn the language fully. . . .

But there are some immense problems here, enough to daunt the most determined optimist. These largely centre, I would like to submit, on a new and peculiar relation between the rate of socio-technical change and the life of buildings. The development of industry and the growth of population compel the expansion of cities and communications. But industry is restless, forever changing its location, its processes, its products. The claims of industry are insistent, they trample down other claims, even the claims of humanity and piety. It is only later, when economic imperatives have receded, that we take in the extent of the damage. It is only now that we appreciate the problem bequeathed to us by the crude multiplication of factories, and of the people to work in them, and of the houses for the people to live in. To take housing alone, it is a need we have never caught up with, a need therefore so compelling that we are still meeting it in ways which we know by experience to be wrong — like the great postwar housing estates round London for example — and which are only aggravating the problems we already have on our hands.

Ever since the industrial revolution set a new tempo for urban growth and social change, we have been working under heavy pressure, trying to combine the development of new technical possibilities with the rectification of past mistakes. Our record is a patchwork of success and failure, but looking at the contemporary urban landscape as a whole, who can doubt that failure is more conspicuous than success? Never before have so

many buildings been erected; never before have so few deserved to survive.

The cheap houses of 70 or 80 years ago were so shoddily built that already many have collapsed and more go down in every gale. Nobody wants to keep them standing and therefore over great areas, as in Birmingham, reconstruction schemes are in progress. But a great deal of Birmingham is, alas, all too solidly built for any idea of replacement to be feasible. In our great cities we must reconcile ourselves to living for generations with these crude and inconvenient monuments to the vigour of economic forces. And, incidentally, while the Londoner has pre-industrial buildings to remind him of pre-industrial values, in many industrial cities these either never existed or have disappeared.

The architect, after a century of uncertainty, seems to have developed a language which is both beautiful and functional. His best buildings do much to redeem the mediocrity of the urban environment as a whole. Nor can one doubt that this language will be intelligible in future generations, even if these generations themselves are building in quite a different way. But there is still a problem about the life of buildings, and of all kinds of construction, including railways and roadways and airfields and all those miles of service pipes and wires which, once laid down, are so expensive to reroute that they have to be accepted as virtually inflexible elements in planning.

In a crowded country like Britain there is all too little room for manoeuvre. Yet technical inventions in the near future may make today's construction as obsolete as yesterday's. Can we devise an architecture and a method of town planning which is better adjusted to an era of rapid change? Can we contrive structures which will be temporary without being shoddy? Can we reconcile the idea of structural transience with lasting aesthetic significance? These are some of the questions to be explored, and there are, of course, some architects already exploring them. But the idea of permanence in building is itself strongly established, and is likely to outlast its own functional justification.

In every Siamese village there is a space set apart for the Buddhist religion. It is called the Wat. It has a surface of swept sand, it is planted with trees for shade and fruit and it contains a number of buildings, often very beautiful in design and decoration. Here the statues of the Buddha are kept, here the monks live and here the people come to hear them preach. Few of these buildings are as much as even a hundred years old. They are built of brick, plaster and wood but not for permanence. Until quite recently, there were craftsmen in every village who were able to replace the decaying

Ewing Galloway

"In every Siamese village there is a space set apart for the Buddhist religion. It is called a Wat . . ."

Arita porcelain plate (Kakiemon style). Japan, ancient

buildings by others at least as beautiful. Now the traditional skill is waning: the new temples are both more permanent and less beautiful than the old. This is a case where the continuity of an aesthetic tradition is more important than the life of any particular building. And more important still is the continuity of the Buddhist religion, which the aesthetic tradition has grown up to serve.

This brief excursion to Siam — which you must excuse because I have recently returned from spending a year there which I very much enjoyed — brings me back to sociology. I have so far avoided a definition of that somewhat contentious word, but for my present purpose I think I would define it as the study of those elements in human society that are persistent and recurrent. You may call such elements associations, or social institutions, or systems of social interaction, or the social relations of production. They range from the family to the R.I.B.A., from the Church of England to the darts club. Their membership may change but they remain, and their activities are in part controlled by written and unwritten laws and customs. It is their continuity which has made possible the development of separate societies over time, and the evolution of the Great Society as a whole.

These associations require a space within which to operate and normally this space includes a building or buildings. Sharing a space in common is often the basis of an association. By obtaining a space or a building or both for its activities, an association helps to insure its continuity. This is clearly the case in the examples I chose, in a club or a Church, in a professional association like the R.I.B.A. or in any ordinary family. Of course it is possible for an association to move to a new space or building, but while it is in occupation the physical milieu does substantiate its claim to corporate existence. A family without a home is like a professional body with only an accommodation address: it has not fully arrived. I understand that there are many families in council flats which are in a hurry to augment themselves so as to become eligible for a council house and thus achieve full family status. No doubt there are associations which are searching both for members and for premises, and for whom to have the one is helpful in getting the other. Thus deeply are associations and locations entangled, and this indicates an important part of the common ground between sociology and architecture.

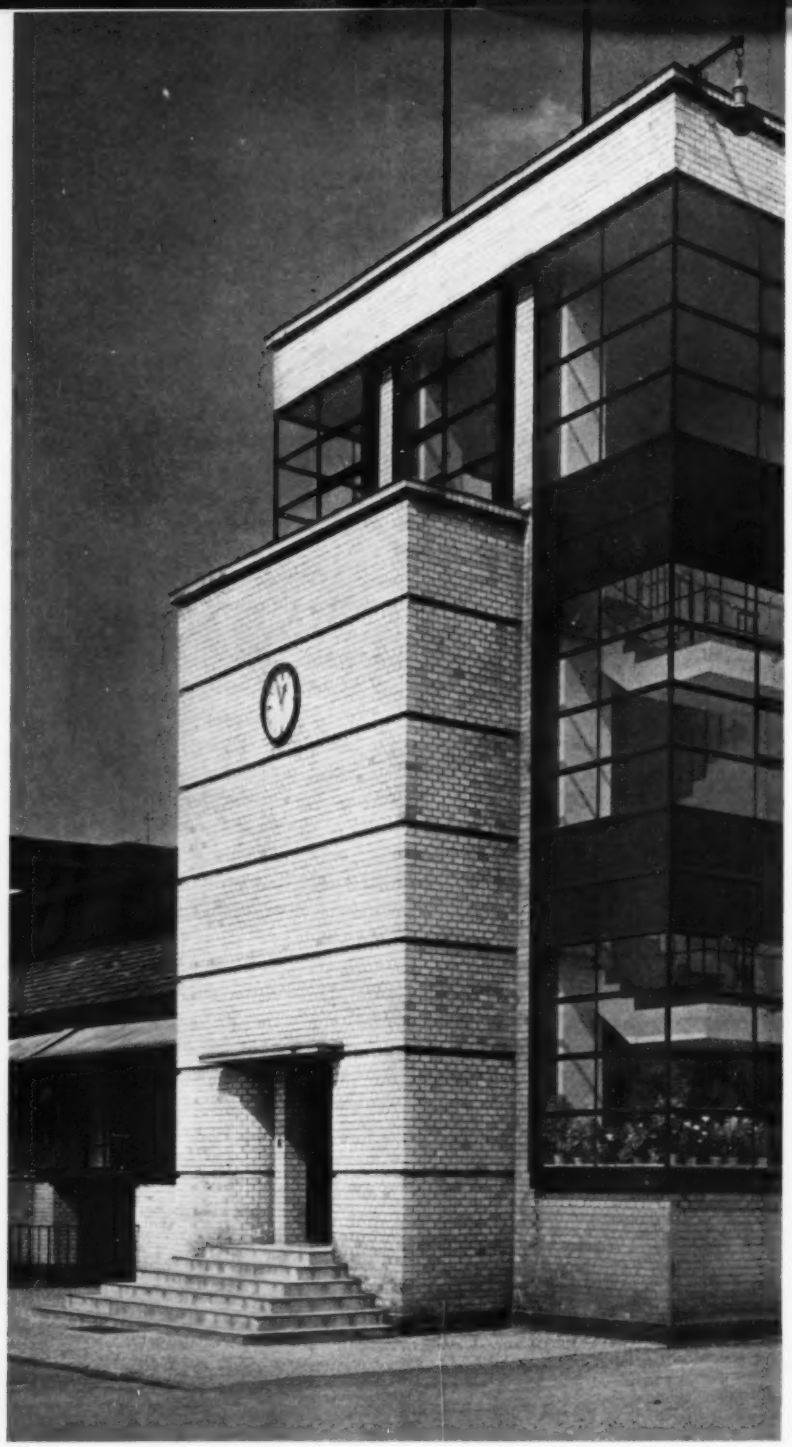
I agree with those who oppose the separation in the contemporary mind between science and art, as I do the lead of my Cambridge teacher, I. A. Richards, to whose splendid essay, "Science and Poetry," I would refer anyone who is interested. I am also inclined to think that sociology has more in common with literature and the arts than any other science and that architecture has more in common with the sciences than any other art. However in the interests of clarity and logic we must distinguish the function of sociology, which is primarily the study of society, and the function of architecture, which is primarily the design, construction and maintenance of buildings. The discipline which for architects would be exactly parallel in function with sociology would consist in a combination of building research, archaeology, art history and architectural criticism: in other words, the assessment of buildings, past, present and future, in all their aspects. There are of course many people whose job it is to design, construct and maintain associations, but in carrying out this job they are not sociologists: they are club leaders, businessmen, politicians, priests and parents, among a host of others. The distinction I am making, you see, is between those who carry out projects and those who assess results and possibilities. Of course in practice the distinction becomes a little blurred. Most architects must at times be critics and researchers in their field, as well as practitioners. Sociologists find themselves at times called upon to legislate and administer. It is worth mentioning that Auguste Comte himself, when he invented the word sociology, really believed in a world virtually ruled by sociologists, and in Marxist Russia the same idea is given another twist by simply giving to Soviet leaders the title of sociologist.

I do not take this position. I would see the task of sociology as one of social observation and criticism, of bringing unknown or neglected social facts to light and of clarifying influential social concepts. To carry out this task, a degree of non-involvement is to my mind essential, and I do not see therefore how, at the present stage of history, a sociologist can at the same time be a politician. The most he can do is to help to inform and enlighten both the politician and the public, and thus reduce the confusion of aims and, incidentally, check up on the results of intended reforms. For example, I am sure it is the province of the sociologist to check up on such things as national housing policy, and the dispersion of industry and population. Here again his interest overlaps with that of the architect.

Of the two, the architect has the more complete and to my mind the more satisfying role, in that he not only studies a given situation but is active in devising means to meet it. Of the sociologist the best that can be said is that in the long run he may aid those forces which are likely to make politicians more creative, more scientific, in short, more like architects.

On April 10 Walter Gropius will receive in London the Royal Gold Medal for 1956 of the Royal Institute of British Architects following its award by Her Majesty Queen Elizabeth II on the unanimous recommendation of the Council of that Institute.

At the request of Architectural Record, Professor Gropius has selected from his outstanding work seven especially significant buildings and projects which we are honored to present here together with a stimulating statement on the architectural state of the nation from a truly pioneer architect and educator.

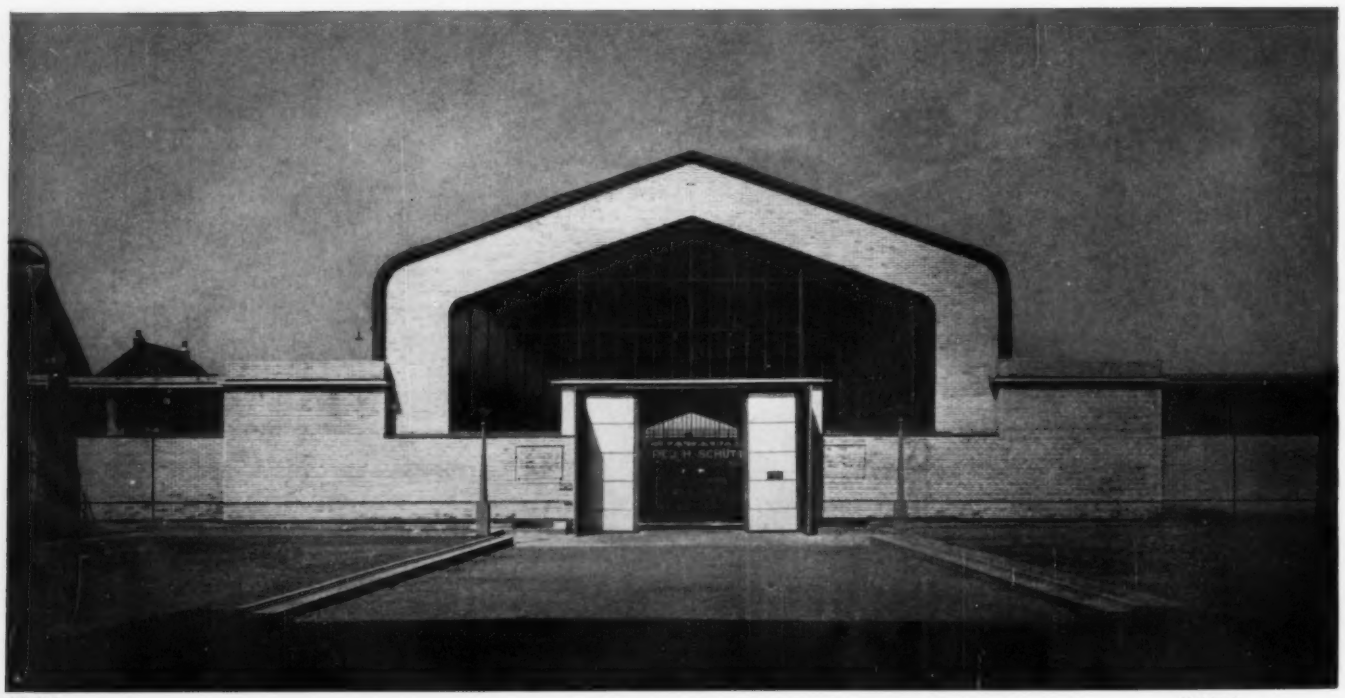


1911-12

WALTER GROPIUS

1911–12 Shoe Last Factory, Karl Benscheidt, Alfeld, A. L. Built 1911–12, photographed 1954. Walter Gropius with Adolf Meyer

1914



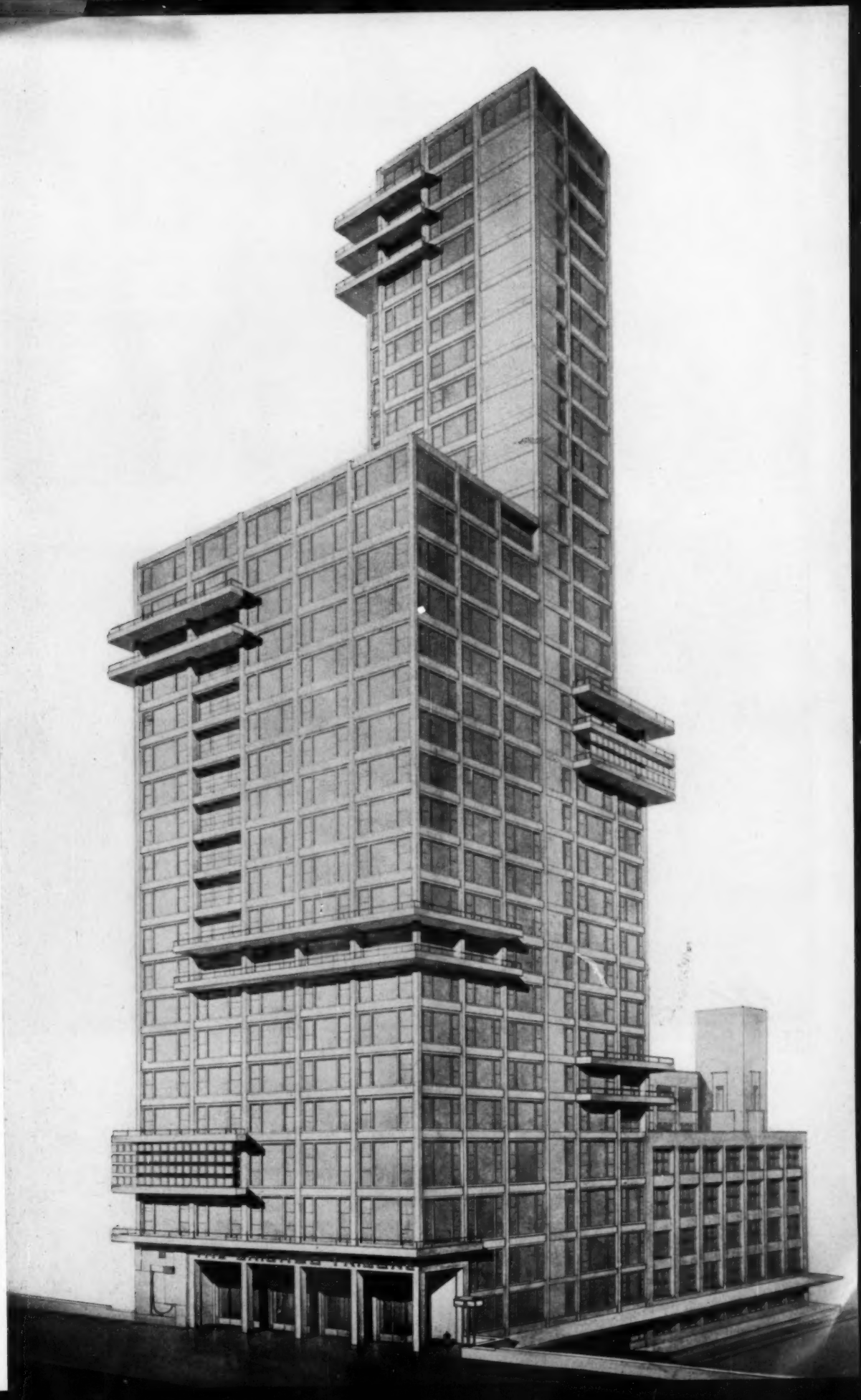
1914

H. Schmolz

WALTER GROPIUS:

1914 *Upper: Office Building at the Werkbund Exhibition, Cologne. Lower: Machine Hall opposite the Office Building at the same exhibition. Both buildings by Walter Gropius with Adolf Meyer*

1922 *Design for the Chicago Tribune Tower*



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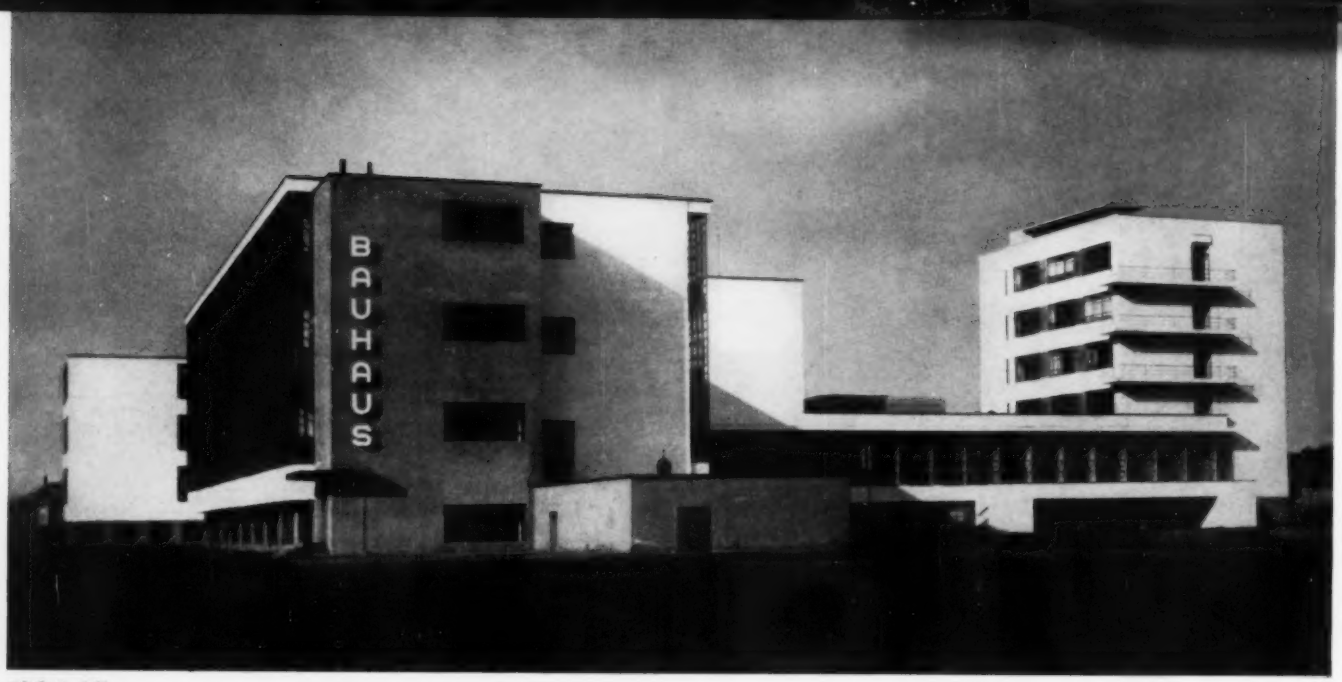
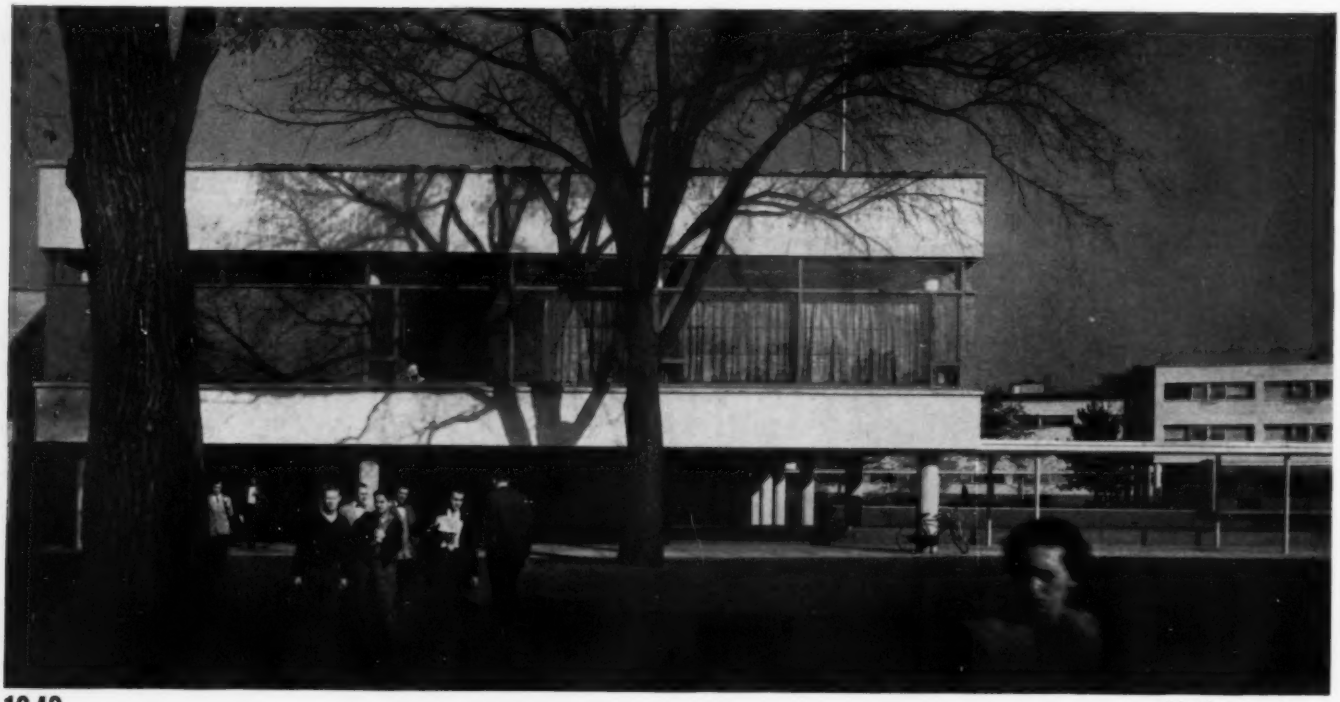


1924-25



1949

Robert Damora

WALTER GROPIUS:

1953

Robert D. Harvey

1924–25 *Bauhaus Building, Dessau*

1949 *Harrard Graduate Center, Harkness Commons Building. The Architects Collaborative*

1953 *Office Building, McCormick Estate, Chicago, designed 1953. The Architects Collaborative; Arthur Myhrum, Associate*

WALTER GROPIUS:

ARCHITECTURAL RECORD has asked me to state both what troubles me most and what pleases me most in the status of architecture in the United States.

In the May issue of 1937 shortly after I had entered this, my adopted country, for good, ARCHITECTURAL RECORD published a statement about my general intentions as newly-appointed Harvard Professor of Architecture. I emphasized that "it should be our highest aim to produce a type of architect who is able to visualize an *entity* rather than let himself get absorbed into the narrow channels of specialization . . . to make way for the man of vision."

Have we made any progress towards this goal? Indeed we have. During the last twenty years, a young American generation of talented architects has come to the fore — among them, I am proud to say, many of my own former students — whose achievements show definite signs of a growing coherence and kinship of the American architectural idiom. Comparing publications on European architecture with those on American design, the latter stands out in its generally more direct, fresh and flexible solutions, less inhibited, less tempered by prejudice. In a country that is blessed with abundance, an enviable array of technical means offers opportunities for daring experiments, and this challenge has been enthusiastically met.

What a contrast to the early days when we struggled with the first letters of the new architectural alphabet, hemmed in on all sides by colossal prejudices and barely able to surmount the technical difficulties that beset all attempts at creating new, unprecedented forms for living. We were lonely fighters with insufficient equipment, with uncertain allies, and practical demonstrations of our ideas were few and far between.

Now, when a new generation is able to use the architectural language of the twentieth century as a matter of course, when prejudice has died down and a building program is in progress that supersedes any expectation, we architects find ourselves still at a fair distance from our desired goal: the transformation of our chaotic, profusely growing surroundings into a pattern of organic entity and visual bliss. For such a desire has hardly taken root yet within our American population as a whole; we are still without their response and encouragement. We are still in danger of losing control over the vehicle of progress which our time has created. The misuse of the machine tends to flatten the mind, leveling off individual diversity and independence of thought and action. But diversity is, after all, the very source of true democracy! But factors of expediency, like high-pressure salesmanship and money-making as an end in itself, have impaired the individual's capacity to seek and understand the deeper potentialities of life from which the culture of a nation develops. Our sense of neighborly integration, our love of beauty as a basic life requirement, are underdeveloped. We need, on the one hand, distinct diversity of minds resulting from intensive individual performance, and, on the other, a common idiom of regional expression springing from the cumulative experience of successive generations who gradually weed out the superfluous and the merely arbitrary from the essential and typical. Such a voluntary selective process, far from producing dull uniformity, should give many individuals a chance to contribute their own individual variation of a common theme and so help to evolve again the integrated pattern for living that we lost with the advent of the machine age. The two opposites — individual variety, and a common denominator expressed by creating form symbols of human fellowship — need to be reconciled to each other. The degree of success in shaping and fusing these opposites indicates the depth of culture reached and is the very yardstick for judging the architectural achievements of a period.

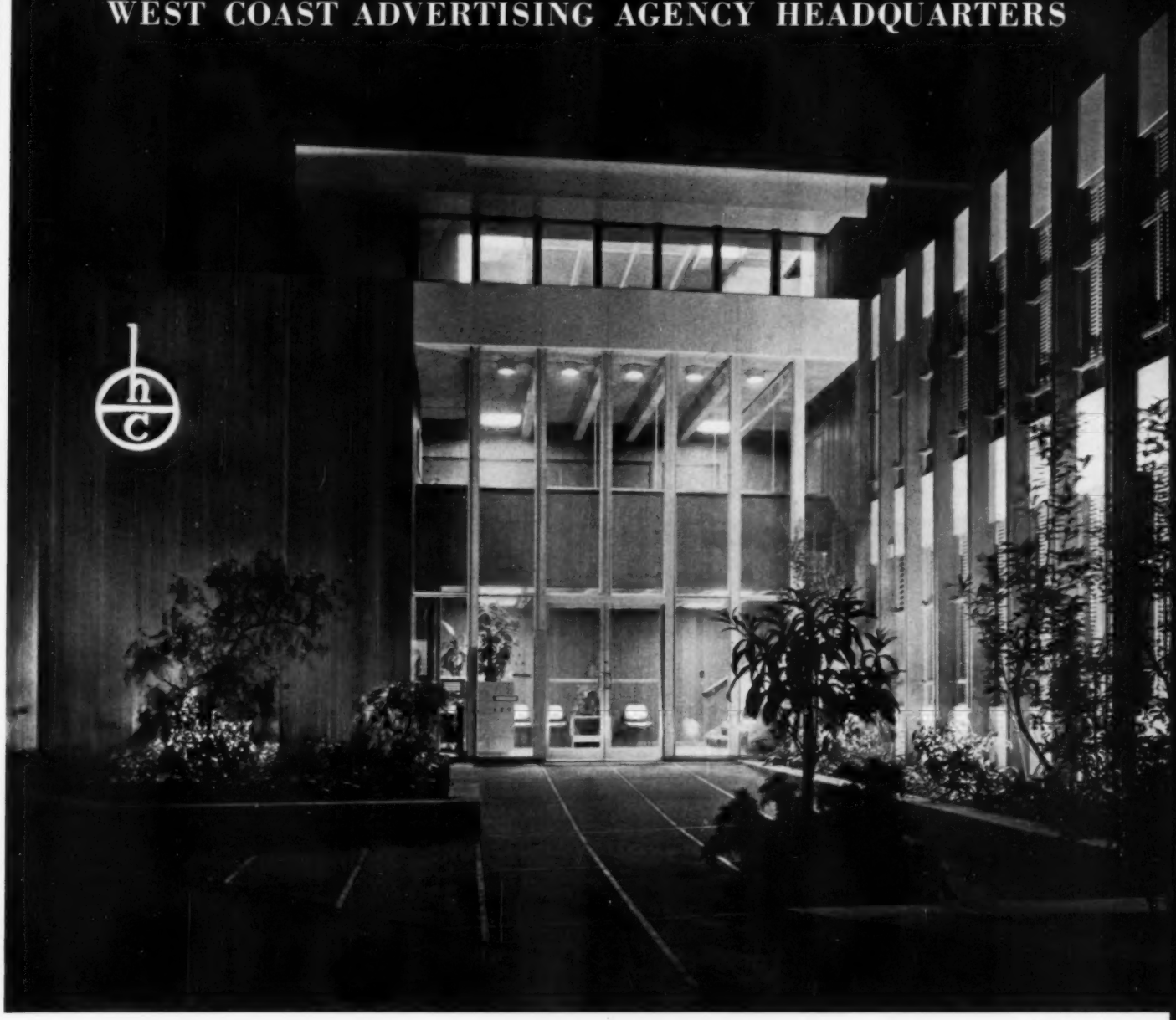
Our scientific age of specialization, with its glorious achievements for our physical life, has simultaneously brought about confusion and a general dissolution of context; it has resulted in shrinking and fragmentizing life.

But there are indications that we are slowly moving away from overspecialization and its perilous atomizing effect on the social coherence of the community. Many ideas and discoveries of our present civilization are wholly concerned with finding again the relationship between the phenomena of the universe, which scientists had so far viewed only in isolation from neighboring fields. The scientist has contributed new knowledge of the identity of matter and energy. The artist, the architect, has learned to express visibly with inert materials a new dimension — time and motion. Are we on the way to regaining a comprehensive vision of the oneness of the world which we had let disintegrate? In the gigantic task of its reunification, the architect and planner will have to play a big role. He must be well trained not ever to lose a total vision in spite of the wealth of specialized knowledge which he has to absorb and integrate. He must comprehend land, nature, man and his art as one great entity. In our mechanized society, we should patiently emphasize that we are still a world of men, that man in his natural environment must be the focus of all planning and building.

If we, the architects and planners, envisage the strategic goal of our profession in its vast complexity, it indeed embraces the civilized life of man in all its major aspects: the destiny of the land, the forests, the water, the cities and the countryside; the knowledge of man through biology, sociology and psychology; law, government and economics, art, architecture and engineering. As all are interdependent, we cannot consider them separately in compartments. Their connectedness, directed toward a cultural entity, is undoubtedly of greater importance for success in planning our environment than finding ever-so-perfect practical solutions for limited objectives. If we agree on this rank of order, then the emphasis must be on the "composite mind," as we may call it, developed through a process of continuous cross-checking and balancing, rather than on the specialized expert who shuns responsibility for the whole and divides his brain into tight compartments.

To rebalance our life and to humanize the impact of the machine, we must give the creative architect, the artist, his chance to reassert himself as the prototype of "whole man." As soon as the longing for "total architecture," as I like to call it, becomes more universal, there will grow a demand for "experiments in living," for courageous practical attempts to examine the living value of our building and planning habits by setting up organic model communities where our new living standards can be tested and demonstrated. As soon as the average American, with his innate enthusiasm and readiness to act, will feel the need for a more beautiful and more organically coherent environment as an expression of his pride and participation in our democracy, then he may cause a chain reaction conducive to solving our great and complicated task, to have both, unity and diversity, the two indispensable components of a cultural order.

WEST COAST ADVERTISING AGENCY HEADQUARTERS



Roger Sturtevant

Honig-Cooper Advertising Agency, San Francisco, Cal.

Architects: Anshen & Allen

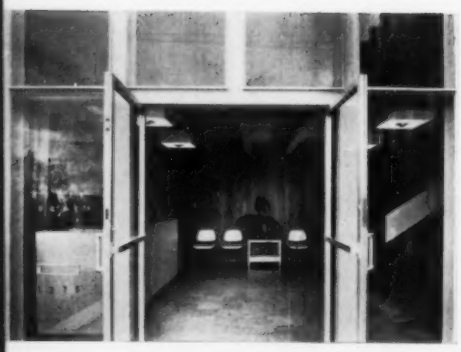
Landscape Architect: Thomas Church

Structural Engineer: Robert Dewell

Electrical & Mechanical Engineers: Earl & Gropp

Contractor: J. L. Eichler & Sons

IN ADDITION to its striking appearance, this new office building holds interest for its structure and plan. The exterior design plays the smooth white of the porcelain enamel panels and the transparency of glass against the grained darkness of the stained redwood columns and boarding to good effect. This combination sheathes a wooden post, beam and plank structure resting on concrete piles and grade beams. Structure, fenestration and lighting are organized on a 3 ft module; cross-partitions are non-structural. Such a scheme has resulted in great flexibility of office rearrangement to take care of future needs as they might arise.



Roger Sturtevant

ADVERTISING AGENCY

Architects Anshen and Allen say:

"The search for a most advantageous use of the extremely irregular site was a major factor in the development of the design. Shabby adjacent buildings gave landscaping great importance in creating a screen and a proper environment for the building. The poplar trees on the west façade are also used as a sun screen.

"Although the building was engineered to take a full third floor, investigation of various design schemes indicated that the addition of a new three-story wing would provide more office space at less expense with the least disturbance to existing facilities.

"The new wing will provide 16 offices including a new executive office on the ground floor opening on the patio. A side exit is included as a convenience to clients parking along the rear."

SECOND FLOOR

Roger Sturtevant

Interior Finishes

The 2 by 4 partitions are variously clad in Philippine mahogany for the offices, painted gypsum board for the corridors, and vertical redwood boards for the lobby. Cabinetry is of Japanese ash, doors of Philippine mahogany, and hardware of dull bronze.

The concrete membrane over the floor planks (which carries copper hot water tubing for radiant heat) is surfaced with cork tile in the lobby, corridors, and special offices; with asphalt tile otherwise except in toilets, where ceramic tile is installed.

The wood beams and planks remain exposed for ceilings; the lighting consists of surface-mounted incandescent fixtures except for the dining room, where coves for fluorescent tubes have been built-in.

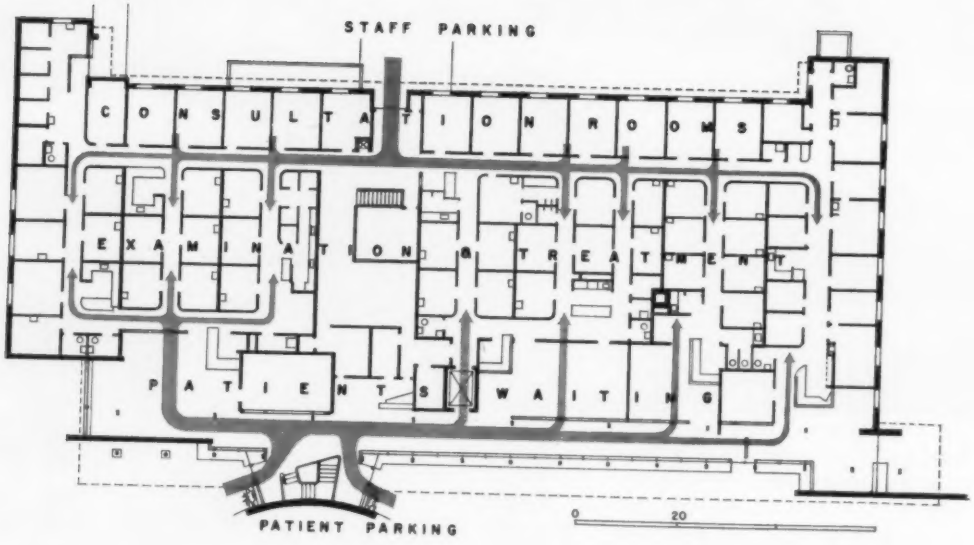
Stuart Weiner

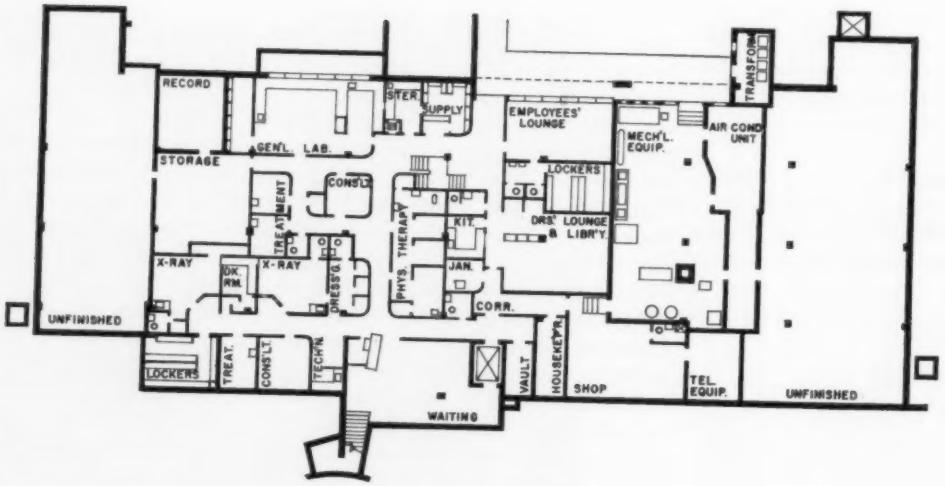
LARGE CLINIC FOR GROUP MEDICAL PRACTICE

Tucson Clinic,
Tucson, Arizona

Scholer, Sakellar & Fuller,
Architects and Engineers

CLINICS for the group practice of medicine have appeared in large numbers in recent years, and seem to have grown in both importance and size. This is one of the most extensive, busiest clinics in the West. The doctors for whom it was built practice as one professional business, in five areas of practice: internal medicine, surgery, gynecology, pediatrics and laboratory and X-ray. Two long corridors connect these elements; one serving the patients and connecting the waiting rooms, the other, paralleling the first, serving the staff. Between the corridors are the examination and treatment rooms. This basic pattern results in a minimum of cross traffic between doctors and patients. Parking areas for patients and staff are adjacent to the separate entrances. Each doctor uses two or three examining rooms. Nurses' stations are located at strategic corners of connecting corridors. Skylights are used to lighten and soften interior spaces. The pediatrics department has an enclosed play yard which serves to lessen noise and confusion in the waiting room. The building takes its form in part from the difficulties of re-zoning for this business use; approval was finally secured for a one-story building with parking areas depressed and hidden to make the building rather than the cars the more prominent.


STAFF PARKING
CONSULTATION ROOMS
EXAMINATION & TREATMENT
PATIENTS WAITING
PATIENT PARKING
0
20

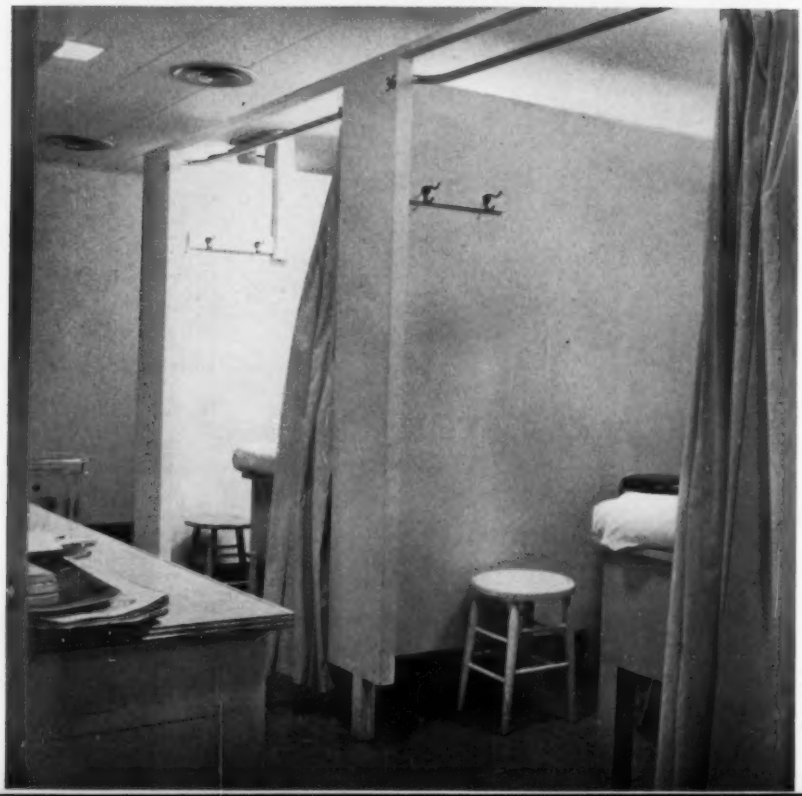

RECORD
STER.
SUPPLY
EMPLOYEES' LOUNGE
TRANSFORM.
MECH'L. EQUIP.
AIR COND. UNIT
STORAGE
GEN'L. LAB.
LOCKERS
CONSLT.
TREATMENT
PHYS. THERAPY
KIT.
DRS' LOUNGE & LIBR'Y.
X-RAY
DK. RM.
X-RAY
DRESS'G.
JAN.
CORR.
UNFINISHED
LOCKERS
TREAT.
CONSLT.
TECH'N.
WAITING
VAULT
HOUSEKEEP'G.
SHOP
TEL. EQUIP.
UNFINISHED

TUCSON CLINIC

Stuart Weiner

Plans of the Tucson Clinic are almost as complicated as those of a small hospital. Basement houses X-ray clinic and laboratory, employees' locker rooms and lounges, boiler room and air conditioning equipment, the building being fully air conditioned. Staff doctors and patients enter at separate sides of the building, have separate corridors, meet in the middle in examining and treatment rooms.

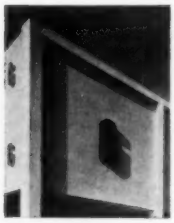
Structure is steel frame with brick bearing walls, laid in flemish bond. Retaining walls are of poured concrete with large colored aggregate; forms were stripped after an hour and exposed surfaces hydroblasted to give wall color and texture



Stuart Weiner

TUCSON CLINIC

A large and well equipped laboratory is one of the assets of a group practice medical clinic, as of course modern diagnostic facilities are one of the reasons for the banding together. The laboratory serves all the medical branches represented by the doctors, and, with the X-ray department, virtually becomes a medical entity by itself. A group of therapy booths, lower view, is another group asset



BUILDINGS FOR RETAILING

BUILDING TYPES STUDY NUMBER 232

MORE THAN MANY OTHER TYPES of construction, buildings for retailing tend to follow trends in population growth and movement, since a store obviously must be within shopping range of either one's residence or place of work.

Population is growing (by 2.8 million a year) and families are moving (about 9 million families per year change homes). Since population movement results in not just an exchange of existing houses but rather in the development of whole new neighborhoods and regions, a large volume of building for retailing thus seems assured for some time to come.

Another powerful stimulus to such building is economic rather than sociological in nature. Our complex economy places greater stress on distribution and services than formerly. Consider that in 1920, only one worker in five was engaged in trade, services, and finance. Today that proportion is closer to one in three.

These factors explain why the commercial construction category has gone on setting new records, while industrial building was showing a post-Korea dip from which it is only now recovering. Contract awards for commercial building in the 37 eastern states reached $2.4 billion last year, some 30 percent ahead of any previous record. The 1956 outlook is for another increase of about 6 percent in floor area and possibly slightly more in dollar value.

In the field of retail building, there are several trends. Some are divergent; most are related to the fact that the automobile has become virtually an anatomical appendage of the American species. Suburbia could not have developed without the automobile, nor could the shopping center. Growth of leisure time is another important factor in retailing. Men have suddenly become buyers of such things as groceries and household goods. Night and week-end shopping are increasing tremendously, and Sunday — formerly the only weekly holiday — is now a big day in many suburban stores.

In some places the automobile has taken us past the shopping center stage to what, for lack of a better name, I would call the commercial highway. Since nearly every American family has a car, or access to one, there are few disadvantages in isolated highway locations for stores selling major items. There are, in fact, advantages. The single store, with its own parking lot, is often more accessible than a big shopping center where traffic jams and long walks may be in prospect. The habit of driving to make a purchase is becoming so ingrained that on a well developed commercial highway like US 22 in New Jersey, one finds drug and variety stores with parking areas. These stores, which used to think their retail lives depended on walk-in trade, now find drive-in trade very satisfactory.

Despite the emphasis on suburbia, downtown is far from dead. City centers grew because of certain advantages. In spite of new headaches, many advantages remain; especially for business offices. There will always be a demand for retail outlets where people work. This is one more reason why retail construction will continue to grow, both downtown and in suburbia.

— George Cline Smith

AS DR. SMITH has pointed out, the complexity of both our economy and social structure has brought into being a variety of buildings for today's retailing.

In continuance of its policy to reflect actual construction activity, ARCHITECTURAL RECORD, in the following pages, presents a selected sampling of the several kinds of retailing structures most common. The examples include two shopping centers, two stores, and two small shops.

— James S. Hornbeck

Dr. George Cline Smith is vice president and economist of F. W. Dodge Corp.; also serves as economic consultant to Sweet's Catalog Service, and edits Dodge's monthly bulletin, *Building Business*

O'NEIL SHEFFIELD SHOPPING CENTER, IN OHIO

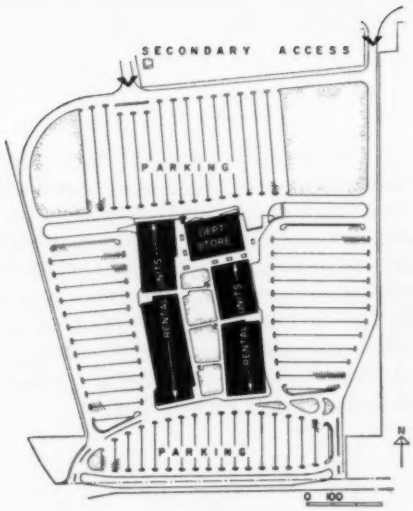
Architects: Weinberg & Teare
Douglas P. Maier, Chief Designer
R. L. Tellman, Structural Engineer
James R. Jones, Jr., Field Supervision

Structural Engineers: Frank Eroskey & Associates
Mechanical Engineers: E. D. & W. A. Kretch
Landscape Architect: Wayne H. Laverty
Contractor: Sam W. Emerson Co.

LOCATED between Elyria and Lorain, in northern Ohio, and designed to serve these cities and the surrounding countryside — total shopping population 175,000 — this regional shopping center was winner of an Award of Merit, AIA National Honor Awards Program, 1955.

The architect and the department store-owner agreed from the start that the center should have more than mere utilitarian appeal for its relatively large market. Thus, its construction includes quality materials, a landscaped mall, an auditorium for civic groups, sign

R. Marvin Wilson, Studio House



O'NEIL SHEFFIELD CENTER

control, and further amenities. The owner's effort was to make shopping a pleasure.

In physical terms, the department store was required to contain 100,000 sq ft for shopping and 50,000 sq ft for service; 200,000 sq ft was to be provided for approximately 40 rental units for the usual food, variety, and specialty shops; and there was to be parking for 3,000 cars — with possible future increase to 4,000. The site fronted on a main highway near an intersection; to prevent traffic jams at this point, extra land was purchased at the rear and side, and roads were built for secondary access from other existing highways.

The central landscaped mall is defined by an elongated U-shaped building group, open to the main highway for advertising value. Focal point in the plan is the O'Neil Department Store, which partially closes the U toward the rear. A natural slope in the land was exploited so that two-level access to the department store could be gained; the upper level facing the mall, the lower level facing the rear parking area.

R.Marvin Wilson, Studio House

The compact group of buildings was centered on the plot so it might be surrounded by nearly uniform bands of parking. Such a scheme holds walking distances to a minimum; in this case to 300 ft maximum. Rental space was divided into four buildings in order to keep these units in scale with the department store, and also to provide pedestrian walkways from the parking areas to the central mall.

A deep red-brown granite bulkhead and base for all buildings lends unity to the scheme, as does the continuous marquee, which has a blue-green porcelain enamel fascia and perforated asbestos board soffit. For variety, the department store is faced with salmon colored brick; the other buildings with gray brick.

The department store signs and the suspended signs were architect-designed for uniformity of size and character. For all other signs, tenants are required by lease to follow regulations governing location, height and width limits, etc. No signs which incorporate movement or flashing lights may be erected.

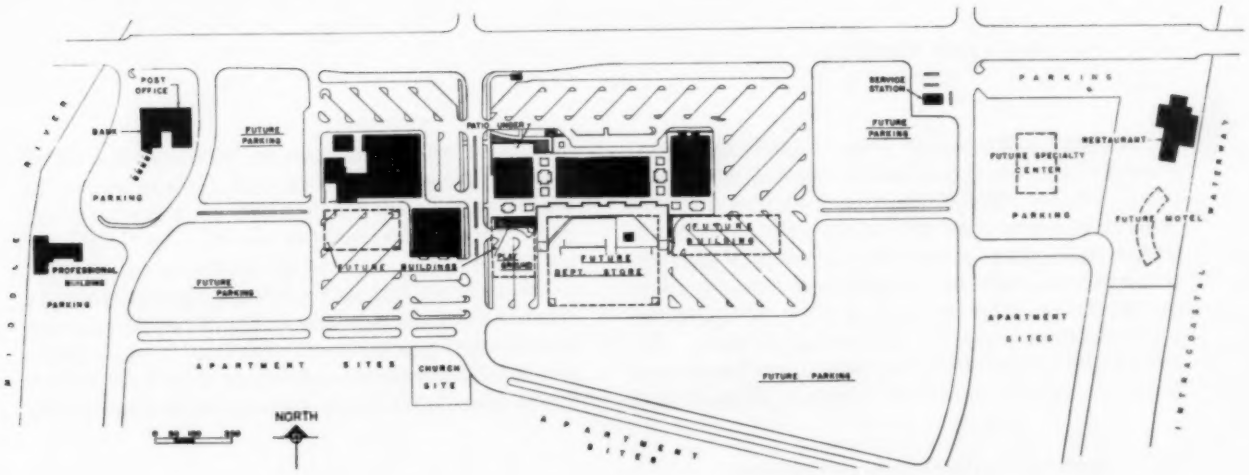
THE SUNRISE SHOPPING CENTER, IN FLORIDA

Architects: Gamble, Pownall & Gilroy

Structural Engineers: Riley & Ross
Mechanical Engineer: George L. Cadenhead
Landscape Architect: Porter G. Reynolds
Color Consultant: John Ullman

THIS SHOPPING CENTER in Fort Lauderdale is part of the development of 150 acres of filled land owned by Antioch College of Ohio. Roughly 100 acres were sold for residential and apartment sites; the remaining 48 devoted to a business center. On the western 5 acres of this latter parcel a bank, post office and professional building were built; on the eastern 6 waterfront acres a restaurant has been built and plans are made for a motel and group of stores for sporting goods. The shopping center proper occupies the central 37 acres.

Alexandre Georges



SUNRISE SHOPPING CENTER

Architect Clinton Gamble says, "I would like to emphasize two points. One is that the present part of Sunrise is only one third of the total job. In planning we decided to compromise the present plan in order to have a really proper arrangement for the final phase — a true regional center based on the mall using the 'Main Street' concept. Also remember that the total area was to be developed, not just the shopping center. This spreads the first buildings more widely apart at present than we would like, but is allowing us to 'fill in' so that everything we do from now on improves the over-all picture. Although this was a hard point to win at the beginning, the owners and tenants are now very happy as we work on the additions and they see the scheme unfold.

"Second, we believe very firmly that in designing retail buildings we are only adding plus values in convenience and appearance as tools for the merchants to use. It is the merchants and their personnel who sell the goods. This idea is of importance to us because it gives

Alexandre Georges

us the right point of view from which to discuss the project. Good selling is more an emotional and human job than a matter of cold logic."

* * *

The present buildings represent the first of two stages and provide 150,000 sq ft of rentable area. There is a 15,000 sq ft Food Fair, a 14,000 sq ft Saks Fifth Avenue, a 10,000 sq ft Allen-Fredericks (women's wear), and 42 other tenants in variously sized quarters. A unique idea is that of a separate building for specialty shops. Called the Arcade Shops, it is placed immediately adjacent the food and drug stores, since most of the smaller tenants depend on traffic generated by the larger convenience goods stores. There are 15 ft walkways piercing this structure, with the front of each of the shops developing the theme of that business in fanciful stage settings. The result is gay and kaleidoscopic — holds interest and appeal. These shops have been most successful, and the same general arrangement is now being followed in other shopping centers.

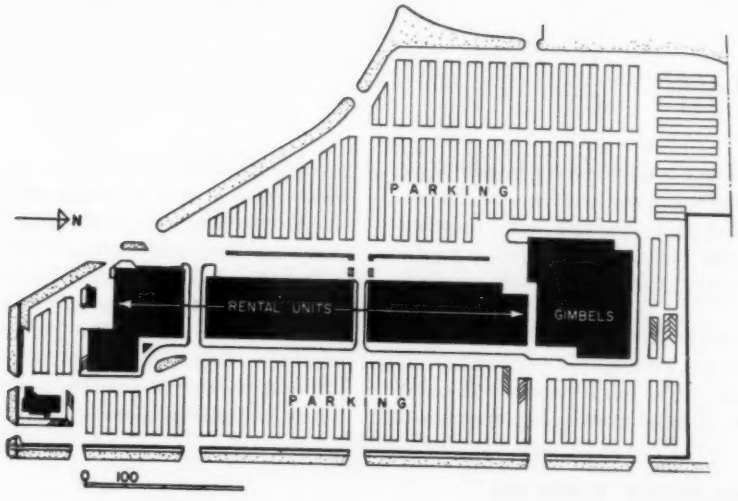
GIMBELS IN THE SOUTHGATE CENTER, WISCONSIN

Architects: Grassold-Johnson & Associates, and Welton Becket & Associates

Structural Engineer: Charles S. Whitney
Heating, Ventilating Engineers: Lofte & Fredrickson
Electrical Engineers: Arthur A. Wanty & Associates
Plumbing Engineers: L. R. Schmaus & Co.
Contractor: Hunzinger Construction Co.

A PART OF SOUTHGATE, the first shopping center in the Milwaukee area, this striking store was designed both to fit into the over-all character of that center and at the same time create an attention-getting character of its own. The already existing structures were designed by Grassold-Johnson Associates, and along with a fourth building now under construction, will complete the project. High intensity exterior lighting for all the parking areas (note a typical standard — above, right) has, according to the architects, contributed heavily to the

Hedrich-Blessing



GIMBELS SOUTHGATE

success of the center. The 5 million dollar Gimbels store, which contains 3,370,000 cu ft on 3 floors — one below grade — was completed and occupied only fourteen months after ground was broken. Its occupancy marks the first time the Gimbel organization has built a second store in any city.

The east and west facades feature large letters of dark green plastic — which are backlighted — on panels of charcoal-speckled glazed white brick. Smaller letters for the end wall are also of green plastic and are pinned away from the building. The reinforced concrete structural frame is faced with smooth finish limestone except at grade, where granite cladding is applied. The store front sections and entrance doors are of extruded aluminum. The blank-walled portion of the first floor and the north facade are faced with brick in a vertical pattern of striations. The building is completely air conditioned, sprinklered, and is lighted by a combination of incandescent downlights and fluorescent tubes in coves, plus accent spots where needed.

Hedrich-Blessing

The store's interior — more or less a departure for the Milwaukee area — was conceived as a single large open area with a minimum of walls, in which the fixtures outline the various merchandising departments. Feature of the interior is a central arrangement of stairways enclosed by electric stairs, accented by cove lighting in a pattern of concentric rectangles. The entrance vestibules, which are floored in travertine, contain large link mats beneath which an air suction arrangement draws snow or dust from customers shoes.

From the Office of Welton Becket & Associates:
Maynard Woodward, Chief Designer
Dan Morganelli, Interior Designer
Charles Gable, Project Chief
William Wilkinson, Store Planning

SEARS STORE AND SERVICE STATION IN FLORIDA

Architects: Weed Russell Johnson Associates

Structural Engineer: Norman J. Dignum
Mechanical Engineer: R. L. Duffer
Landscape Architect: Porter G. Reynolds
Contractor: Edw. M. Fleming Construction Co.

IN EXPLANATION of some of the thinking that went into the design of this attractive Sears unit in Miami, Architect T. Trip Russell says, "In a store of this kind, the plan is of necessity derived from a fixture layout prepared by the owner. Such a layout is based on long and considered experience in merchandising of this particular kind. We were able to simplify it somewhat and make it a bit more straightforward architecturally, but the extent of such improvement was necessarily limited. The parking layout was carefully studied

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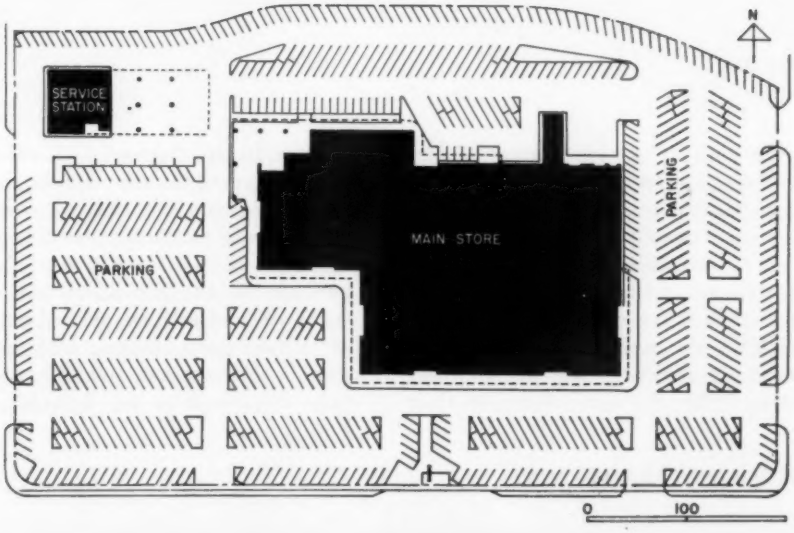


SEARS IN FLORIDA

to accommodate the greatest possible number of cars and at the same time allow sufficient area for rather elaborate landscaping so the area would not have the appearance of a vast, uninviting, empty field. Sears is willing to invest considerable in landscaping, both on their own and on adjacent city-owned property, for they feel landscaping plays a major role in upholding quality of design. They also maintain such landscaping with great care. In addition, they like to build attractive bus shelters for the convenience of their patrons. In some instances, covered walkways connect such shelters to the store building.

"The location of the service station was dictated by the nearness of another service station, and it was at first considered something of a gamble. It has, however, done a phenomenal business both with Sears customers and with the general public.

"A two story building with electric stairs is consistent with current thinking, and obviously, large glass display areas are desirable for the first floor.

© Ezra Stoller

On the second floor there was no need for glass except for a patio-furniture sales area, where an outdoor character was achieved by means of a glazed porch.

"The owner is greatly interested in materials that are attractive yet low in maintenance cost. Many Miami buildings are of concrete block and stucco, which requires constant painting and which is difficult to maintain without the appearance of unsightly cracks. We have studied the problem for some time and have found three materials that can be used with relatively low initial cost and which offer the advantages of easy cleaning and permanent surfacing. They are face brick, precast concrete slabs with marble or quartz facing, and porcelain enameled steel. All three are used for this building, and the future cost for exterior maintenance should therefore be virtually negligible.

"It had been expected that this store might draw heavily from Sears downtown Miami store. Instead, it has done a remarkably heavy business since opening and sales at the downtown store have also increased."

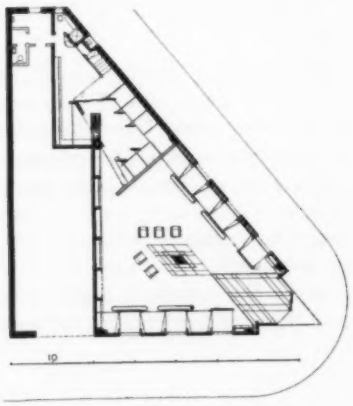
JAX SHOP FOR WOMEN'S WEAR, IN CALIFORNIA

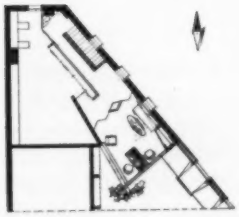
Architect: William Sutherland Beckett

Owner: John M. Hanson
Contractor: Pallisgaard-Wilson Construction Co.

As STRIKING as the high-style women's wear it features, this unusual shop on a triangular corner on Wilshire Boulevard, Beverly Hills, owes much of its success to its eye-catching appearance, as well as an unusual theory of merchandising. The exterior is of black stucco with bulkheads of brass-flecked white terrazzo, polished brass letters and hardware, and awnings of white canvas on metal frames painted a chutney color. The entrance doors and panels over them are of the same chutney. The diamond shaped marquee, which pene-

Julius Shulman





Julius Shulman

JAX WOMEN'S SHOP

trates through from inside to outside, is glossy white. Including the rental area shown in the plan (which this shop will soon occupy) the total area is 3,340 sq ft. Upon arrival, major merchandise is unpacked and stocked in the sales area, thus obviating the need for more than a minimum storage space. Display and hanging devices are flexible for seasonal changes. The design is calculated to build up an informal atmosphere and encourage customers to browse and inspect merchandise. Also, mirrors and fitting rooms are arranged to carry out the idea of "customer modeling" as a sales device, a concept strongly held by the owner of the shop.

The interior is conceived as a subdued, muted background for the merchandise itself. Main center of interior interest is the wood-burning fireplace — centrally located — which is supported on brass bars that pierce the ceiling. The ceiling is painted matt black, but otherwise, colors that are used for accent include chutney (as for the exterior), a gray-green, off-white toward gray, dark mustard-yellow, and a soft gray-blue.

Gordon Sommers

PROTOTYPE REGAL SHOE SHOP ON THE WEST COAST

Architect: Victor Gruen & Associates

Contractor: J. E. Wilson & Son
Store Fixtures: Cowan Co., fabricator
Lighting Fixtures: Strickley & Co., fabricator

ARCHITECT Victor Gruen says, "In designing this particular store in Huntington Park, a Los Angeles Suburb, we were asked by the client to plan in terms of a prototype store, not just one for this particular location. The Regal Company had until this time been primarily interested in men's shoes, but now they wished to open a new type of operation for the entire family and sell women's and children's shoes as well. Shoe sales for an average family were calculated, after market studies, at 20% men's, 40% women's and 40% children's.

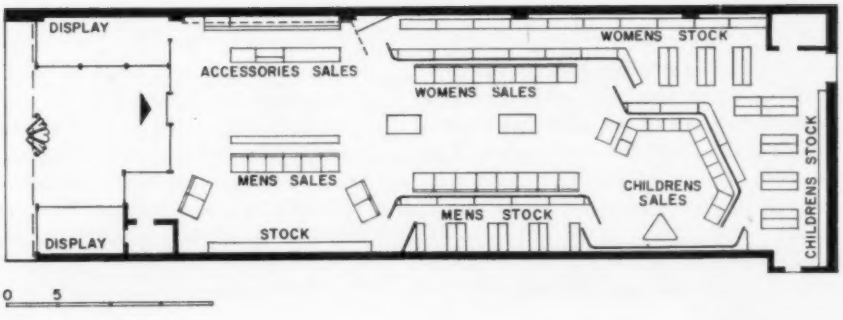
REGAL SHOE STORE

"As the client operated in the middle-price field, he wanted an interior design which would not convey the idea of a luxury shop yet which would be attractive. Attractive especially to women and children, whose trade would account for 80% of their business.

"Specifically, the owner requested that the main body of the store be divided into three merchandising sections: men's, women's and children's. Also, he asked for a new 'Regal' sign — one which would have a more feminine character — so that it might take the place of the previous sign the company had been using and which was designed primarily for a men's store."

The upper facade is composed of plastic-sprayed marine-plywood panels supported on a tubular aluminum frame with exposed and carefully detailed fastenings. The lettering for the word "Regal" is outlined with white neon before a plastic-sprayed background, while the top illumination is from 100 watt incandescent lamps spaced 15 in. on center in a strip reflector which is painted red on its outside surface.

Gordon Sommers



Gordon Sommers

REGAL SHOE STORE

As one enters, he is in the accessories section, in which the floor is sheet rubber. The counter, in three sections, features bags and hosiery in two, with a third section devoted to wrap-and-cash. All of the other retail areas are carpeted wall to wall except the stock rooms. The children's section is of especial interest since it features bench type seating and is decorated in a carrousel spirit, with animal murals.

Metal stock shelving — exposed in the men's department — has proven to be flexible and space-saving. The shelves are adjustable on 3/8 in. centers, providing storage for both active and inactive stock. The shoe boxes themselves were designed by the architect.

The interior of the store is lighted by a pattern of surface mounted fixtures, softened by small perforations and containing also incandescent reflector lamps. This lighting is supplemented by three chandeliers in the women's section and especially designed wall brackets to illuminate the accessories counter. The combination furnishes between forty and fifty foot candles.

DESIGN FOR FIRE SAFETY

Causes of any fire are hard to determine. Control of fire, however, is largely a responsibility of the architect and engineer, because it should be inherent in good and conscientious design of building structures and their components

FIRE PREVENTION begins on the drawing board" is not a cliché. It is a meaningful phrase which is given active credence by responsible architects, engineers and fire protection specialists, and the effectiveness of which is proved by statistics showing that fire loss is on the wane. True, *actual* fire loss figures are higher than they were, say, a decade ago. But in proportion to the dollar value of existing structures, which has increased logarithmically during the construction "boom," they are on the downgrade.

This is an encouraging sign. But it does not erase the fact that there is a multiplying list of causes contributing to the spread of fire, and therefore an ever-increasing list of elements in building design on which the architect must keep himself contemporary. New products, new methods, new equipment and a new philosophy of design for effective operation — all introduce new fire hazards which must be controlled. Whereas years ago the architect had only such obvious elements to remember as exits, fire walls and fire alarms, in designing today's buildings he must consider the new heating and air conditioning systems and their attendant hazards, the increased use of electricity, and the special dangers of mid-twentieth century operations — all of which have a very definite bearing on the life of the structure: will it "reach maturity," or will it be wasted by fire long before it has survived its expected usefulness?

With the increasing complexity of present-day technical building installations, architects are recognizing more and more the necessity for calling upon the experience of fire protection engineers in designing fire safety into their buildings. Such organizations as the National Fire Protection Association in Boston and the National Board of Fire Underwriters in New York not only publish a never-ending list of valuable books and pamphlets which cover all phases of fire protection, but they also offer advice on all aspects of building design as it relates to fire safety. Most fire insurance companies number among their personnel fire protection engineers who are available for consultation. And there are a few firms which exist for the express purpose of offering fire protection engineering services.

Most of these sources agree that fire protection is expensive only when it is too late. It is expensive, in loss of both property and life, if a building is demolished by fire and must be rebuilt with much-improved fire safety features. It is expensive also if fire protection is added to a building as an afterthought.

Most of these sources agree too that, although building codes are necessary and helpful, there must also be an understanding of the design principles involved. Local building codes, and the National Building Code as recommended by the NBFU, cover the basic elements which must be considered in good, fire-safe design. However, there is more to ensuring maximum fire safety in buildings than a mere compliance with "the letter of the law." There is a "morality" in design which goes beyond the codes and insurance rating schedules. This requires an analysis of such elements as public service facilities (water supply, fire department, etc.), topography and locale, and intended occupancy, which oftentimes shows that there is economic justification for a high degree of built-in fire safety.

This "degree" of fire safety varies, of course, for different building types because of the very nature of their occupancies. Hospitals, for example, call for a high degree of fire safety because they have a concentration of human occupancy which cannot be easily evacuated. Multi-story buildings, in which panic may result in the event of fire, call for a higher grade of construction than low buildings, from which egress can usually be obtained quickly.

In the next few pages twenty-three of the most important elements of design for fire safety will be considered, with particular emphasis on their relation to industrial buildings, mercantile buildings, schools and hospitals.

The editors wish to acknowledge the help of the National Fire Protection Assn. and National Board of Fire Underwriters in preparation of this article.

Wide World Photos

FIRE-RESISTIVE CONSTRUCTION

The term "fire-resistive" is often confused with the terms "fireproof," "fire-retardant" and "non-combustible," and it shouldn't be. "Fireproof" is a misleading term, since there is nothing, really, which is absolutely immune to fire of sufficient intensity and duration. "Non-combustible" is applicable only to those materials which will not ignite or burn when subjected to fire. "Fire-retardant," according to the definition in the *NFPA Handbook of Fire Protection*, "is often used to refer to materials or structures which are combustible in whole or in part, but have surface coverings to prevent or retard ignition or the spread of fire under the conditions for which they are designed."

"Fire-resistive" is a more definitive term because it is relative. A building is constructed of materials which are fire-resistive to a certain specified degree, and this specification is expressed in hours. Thus a building which has a fire resistance of 1, 2, 3 or 4 hr is expected to withstand fire exposure for the specified number of hours.

The elements of a building which determine whether or not it is fire-resistive are its structural components — walls, floors and roof. It is desirable that *all* buildings be highly fire-resistive. However, all factors considered, this is not always absolutely necessary. It depends basically on the occupancy. There must be compensation for its omission, however, and this usually takes the form of complete sprinklering of the building.

The use of fire-resistive materials in construction of a building does not insure the safety of that building unless all the other features of design which are discussed on the following pages are given the proper consideration.

PROTECTED STEEL MEMBERS

Steel will not burn, it's true. However, it will expand under heat of sufficient intensity and so warp the structure it is intended to support that more damage will result from the collapse of the building than would have resulted from the flames alone. Bare steel, then, should be protected with a fire-resistive covering. One of the most commonly used coverings in buildings today is metal lath and plaster. This insulates steel members against a temperature rise which would destroy their strength and usefulness.

It is as important to protect steel decking as it is to protect steel columns and beams. Such protection prevents transmission of high temperatures through floors to other parts of the building where combustibles may be ignited. The practicality of this rule was demonstrated in the disastrous Livonia fire of 1953, in which the light metal roof deck was heated far above the low melting point of the asphalt pitch with which it was covered, thus transforming it into a dripping fuel which contributed to the magnitude of the conflagration.

NON-COMBUSTIBLE FINISHES

Since most fires start within the building, the proper selection of materials for interior use is of even greater importance than fire-resistive construction. A fire-resistive shell simply ensures that the shell itself will be saved and provides little security against spread of the fire.

Most flooring and basic wall materials are fairly resistant to fire, and many ceiling components, fixtures and even paints have been developed which have high ratings. However, with the wealth of these and other products which are available for architects' specification today, it is difficult indeed for the architect to know which of these will best suit his purposes, especially in regard to fire safety. In order to aid him in his selection, a number of agencies maintain testing laboratories which publish reports for his guidance. The largest of these agencies are the Underwriters' Laboratories, Inc.; Factory Mutual Laboratories in Norwood, Mass.; Factory Insurance Association in Hartford.

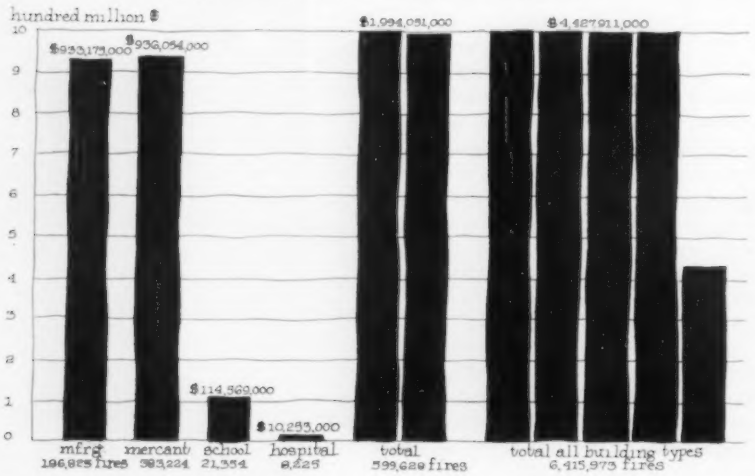
In addition to the building materials which these laboratories test, there are many other interior components, especially furnishings, on which the architect must exercise judgment. Although many materials, by their very nature, are combustible, some of them are available with special treatments which reduce their degree of fire hazard.

SPRINKLERS

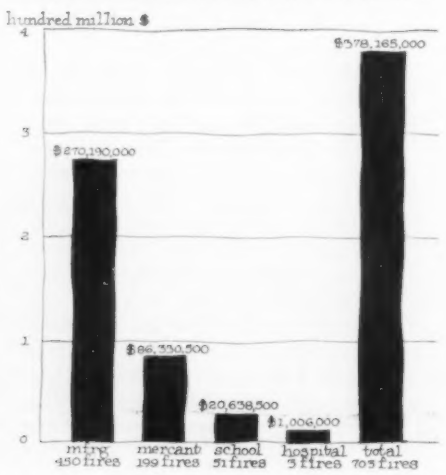
Lack of sprinklers, it can be seen from the graph on the opposite page, was the major contributing factor in the spread of 703 large-loss fires reported to the National Fire Protection Association during the five-year period 1950–1954. It figured in the reports of 76 per cent of the fires.

Sprinklers are recommended, of course, for all buildings. They are especially important in buildings of non-fire-resistive construction and in buildings which house combustible contents. The

TOTAL DOLLAR LOSS OF ALL FIRES
Reported to NFPA, 1950–1954 (U. S. and Canada)



TOTAL DOLLAR LOSS OF 703 LARGE-LOSS FIRES
Reported to NFPA, 1950–1954 (U. S. and Canada)



very nature of their operation — confining the fire to its point of origin and extinguishing it before it has had an opportunity to spread — prevents flames from reaching and thus igniting the combustible structure or its contents.

In many buildings in which the type of occupancy does not call for sprinklers throughout, it is essential to sprinkler certain danger areas. It can be seen from the list on the last page of this article that the major causes of fire are equipment or materials that are usually located in service areas. Basements and storage rooms are serious offenders, because they are often cluttered with highly combustible materials.

The main advantage of a sprinkler system, aside from its obvious function of extinguishing the fire immediately, is that it minimizes water damage. Three basic types of sprinkler systems are: "wet," in which water is already in the pipes ready to supply the sprinkler heads; "dry," for unheated areas, in which air pressure in the pipes admits water at special valves when fire occurs; or "deluge," in which one thermostatic element actuates several sprinklers simultaneously, for extra-hazard occupancies. The new sprinkler heads provide better atomization and distribution pattern and so quicker control of fires.

Sprinkler systems have refinements which increase their merit far beyond the speedy extinguishment of incipient fires. They can incorporate detection and alarm systems as well and can also be provided with safeguards against mechanical failure. In many systems, as soon as one sprinkler is activated, an alarm is sounded at some predetermined point or points so that fire-fighting forces are summoned immediately. If, as so often happens, there is no need for the fire-fighters when they arrive, because the sprinklers have already killed the fire, there is at least assurance that the water is turned off.

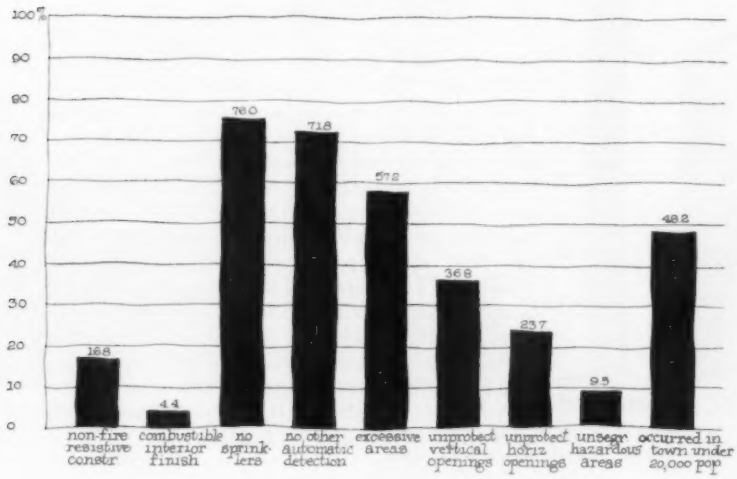
Although not considered in the category of sprinkler systems, there are other automatic extinguishing systems for special uses. In some cases a foam liquid is injected into an extinguishing system to provide a finely divided foam discharge. A dry chemical system has been developed for certain types of special hazards, especially those involving flammable liquids. Nitrogen pressurizes the stored dry chemical, forcing it through piping to outlets in hazardous areas. Carbon dioxide, stored in tanks, can also be pressured through pipes to special outlets.

AUTOMATIC DETECTION

It is desirable that automatic detection be an integral part of a sprinkler system, and that sprinklers be installed in every building. But in the absence of a sprinkler system, some other form of automatic fire detection should be provided. The principle of operation of a heat detection system is generally similar to that of a sprinkler: a heat-sensitive mechanism, usually protected by a small housing as shown in the sketch at the right, reacts when the temperature reaches a pre-determined point, thus opening or closing a circuit and sounding an alarm. No extinguishing action occurs until protective agencies reach the scene.

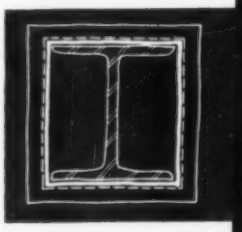
There are other detection systems

MAJOR CONTRIBUTING FACTORS IN SPREAD OF 703 LARGE-LOSS FIRES
(Expressed in per cent)



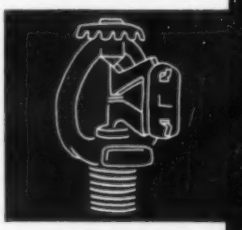
As a quick-reference index to elements to be considered in designing buildings for fire safety, the 23 most important elements are sketched and listed briefly in this strip

Fire-resistive Construction *Structural members should be of non-combustible materials which have specified fire ratings*



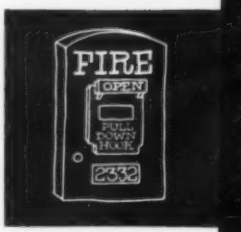
Protected Steel Members *Steel members will expand and buckle under heat of sufficient intensity, and so they should be protected with a fire-resistive covering*

Non-combustible Finishes and Materials *Interior furnishings and coverings should be of materials that won't ignite and burn when subjected to fire*

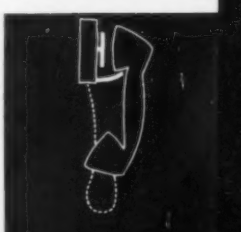


Sprinkler System *Loss by fire in buildings equipped with automatic sprinklers has been practically negligible, thus proving their effectiveness*

Automatic Detection System *If not incorporated in the sprinkler system, automatic fire detection should be installed separately*



Fire Alarm System *An alarm system, either manual or automatic, or both, is essential and should be suited to the building type*



Communication System *A good intercom system is important, either to be used with or to supplement the fire alarm system*

All duct linings should, of course, be fire-resistive. If combustible, they provide fuel to spread fire through the ducts; then dampers will do little good.

Dampers lose their value also if the duct fails either by pulling out of the wall, thus leaving an opening, or by collapsing. Protection against the first event is afforded by installing in the wall a 10-gauge or heavier steel sleeve into which the duct can be inserted. Protection against the second event is afforded by fire-resistive enclosures around the main vertical ducts so that the heat will not cause them to collapse.

Conversely to the danger air conditioning ducts present in the spread of fire, they can be used positively under the right circumstances. In windowless buildings or buildings in which there is an extreme panic hazard, the air conditioning system can be used for smoke removal.

ADEQUATE VENTING

Venting is important in many areas of operation, probably the most familiar of which are kitchen and laboratory areas and hazardous industrial areas in which explosions are possible. In many new one-story plants with unbroken interior spaces, roof vents have been installed for exhausting smoke and gases, thus increasing visibility and accessibility for fire fighters.

In kitchens the exhaust of heat and gases presents somewhat of a problem because grease which condenses on duct interiors can be ignited easily by a spark or a small fire from the range. Filters to collect the grease provide a solution only when they are cleaned or replaced frequently. Other factors are standard for almost all duct exhaust installations: no dampers, ample clearance from combustible materials, exhaust to outside of building, no connections with other ventilating systems, handholes and other facilities for cleaning.

In explosive areas, vents should be provided for release of pressure before structural members are damaged. The selection of vents should be governed essentially by the strength of the structure and the expected intensity of the blast. There are a number of different venting methods which can be used.

The structure itself can be the means of venting, with lightweight wall sections which will blow out at the first impact of an explosion.

Hatches in the walls or roof of heavily constructed buildings can be installed to blow out in the event of an explosion. Some roof hatches, often combined with skylights, are designed with thermostatic elements, so that they will open in the event of fire as well as explosion. This type of roof vent, sometimes operated manually instead of automatically, is installed frequently in non-hazardous areas, such as schools, in order to provide a means for removing smoke and gases resulting from fire.

Large roof openings, protected by light weather hoods which will blow off in an explosion, can be installed on the roofs of one-story or multi-story buildings in warm climates.

Louvered openings have served effectively as vents for the release of explosion pressures even though they can't be considered completely unobstructed.

All vents should, of course, be located as close as possible to the expected point or origin of an explosion, if it can be predetermined, with exhaust to the outside of the building.

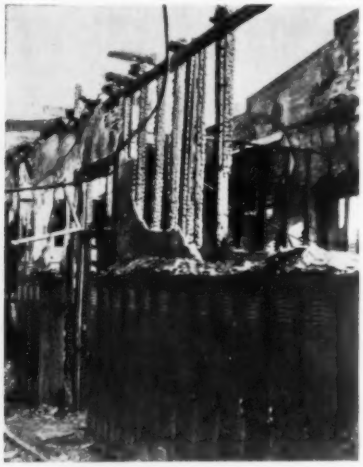
ADEQUATE, ACCESSIBLE EXITS

Exits are usually the only means of escape for occupants of a building in the event of fire. Nobody relishes the prospect of having to use a window to escape, and outside fire escapes are not only impractical in many cases but often dangerous. Therefore, exits should be given very careful consideration. They should be well distributed and clearly indicated. A person on the top floor of a building should be able to find his way, by means of obvious, well-placed signs, to a protected stairway and thence to an outside exit.

In one-story buildings, ample exits should be provided and marked. In many one-story schools, each classroom has both a door leading to the outside and a door leading to the corridor. Both, of course, should open outwards so that flow of traffic toward them will not prevent their being opened. All exterior doors, for that matter, should open outwards, and often panic bars are useful when there is a chance that there might be a panicked rush toward them. In some buildings, such as psychiatric hospitals, where it is desirable that only a few exits be used regularly, a central control system can be installed to actuate panic bars on doors or locks on windows which should normally be kept locked.

There should always be at least two means of escape from any one area, each remote from the other.

NFPA



Carmi Township High School, Carmi, Ill. Burned Jan. 3, 1955. Loss: $250,000. Contributing causes: No sprinklers or automatic fire detection system, non-fire-stopped walls and ceilings.

SCHOOLS

Schools, like plants, seem to be spreading out horizontally, with one-story buildings the rule, instead of the exception, in rural areas. This makes for a high degree of fire safety, especially in those schools in which there are outside ***Exits*** *from every classroom. Two-story and multi-story schools should have well-planned exits, with the required* ***Enclosed Vertical Openings*** *for stairways. For fire drills a* ***Fire Alarm System*** *and a good* ***Communication System*** *are necessary. Cafeterias and boiler rooms, although not strictly* ***Hazardous Areas,*** *are the origins of many fires and so should be separated from the rest of the school.* ***Steel Beams and Columns,*** *often exposed in one-story schools, should be protected.* ***Interior Finish Materials*** *should be carefully selected, for it is usually these which add fuel to an incipient fire.*

HAZARDOUS AREAS

Structural damage resulting from explosions can be minimized by locating hazardous operations or equipment outside the building, either in a separate building or cut off from the main building by a pressure-resisting wall. With the increasing use and storage of dangerous and combustible gases, vapors and liquids, especially in industrial buildings and hospitals, special attention must be given to protecting the rest of the building from them.

Many hospitals store their oxygen supply outside the main plant and pipe it into the building. In plants, hazardous operations should be carried out in areas which are well segregated from the rest of the building. Even in schools, laboratories should be planned so that they are in a separate wing. No matter where the operation is housed, however, venting, as discussed before, should be adequately provided for, whether it be through roof vents, through blow-out panels or through lightweight walls.

There are other precautions which should be taken in areas in which there is a danger of explosion. Since fire will almost always follow the explosion, sprinklers should be provided and also fixed fire extinguishing equipment. This fixed equipment should be so installed as to minimize damage to it. Piping for the sprinklers should be supported by the strong, explosion-resistant, main framing members of the building. In the event the sprinkler line could be damaged, the inside fire hose lines should be fed by another source. When ductwork is used to vent the explosion, it should be strong enough to withstand maximum explosion pressure.

There are other hazardous areas, of course, than potential explosion areas. Boiler rooms, carpenter shops, trash rooms, even kitchens and laundries present a potential hazard, and these areas should be so arranged as to minimize the danger of fire spreading to other parts of the building. They should have sprinkler systems, fire-resistive walls and ceilings and fire doors at all openings.

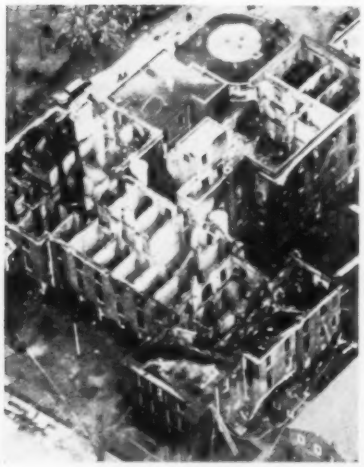
STATIC ELECTRICITY

The generation of static electricity in an area in which there are ignitible elements makes that area dangerous, and although it should be well-protected, it is not necessary to segregate it to the same extent as the hazardous areas described above. A widely used method of protection is that of grounding. In hospital operating rooms, where combustible gases are present and the generation of the slightest spark could start a fire or set off an explosion, the entire floor area is often made conductive and grounded to the building itself. All equipment in the room must then be of metal, conductive rubber or some other conductive material, so that it too will be grounded to the floor. In that way any possible electricity will be drained away before it can be generated in a spark.

SHUT-OFF VALVES

Shut-off valves should be provided in service lines of gases, vapors and hazardous liquids. They are most often located outside a building, so that they can be operated from without in the event

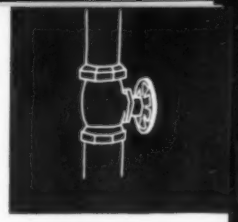
United Press Photo



St. Anthony Hospital, Effingham, Ill. Burned April 4, 1949. Loss: $1,000,000+. Contributing causes: no sprinklers or automatic detection, unprotected vertical openings, combustible finishes.

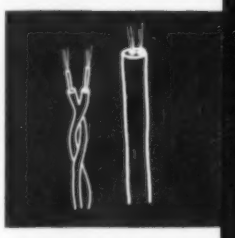
HOSPITALS

Hospital fire losses are practically negligible when compared with losses in industrial and mercantile buildings, mainly because so many precautions are taken (and are required by building codes) to minimize the chance of fire incidence. Buildings are usually of ***Fire-resistive Construction,*** *and* ***Interior Materials*** *are being selected more for their non-combustibility. The trend is toward smaller rooms;* ***Excessive Areas,*** *such as long corridors, should be broken up with fire partitions.* ***Fire Doors*** *should separate floor areas, especially kitchens, operating rooms, etc., where* ***Hazards*** *exist, and should be used in* ***Enclosed Stairwells.*** ***Communication Equipment*** *is an important consideration and should be used with the* ***Fire Alarm System*** *to provide the most satisfactory type of fire alert. All types of* ***Portable Equipment*** *find special uses.*

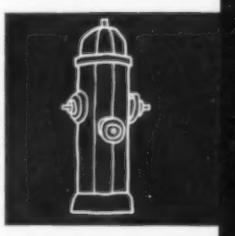


Shut-off Valves *Shut-off valves, automatic or manual, should be incorporated in all supply lines of gas, oil or flammable liquids or vapors*

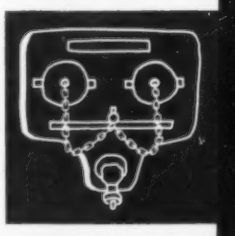
Insulated Pipes *All pipes, ducts and other heat-conducting elements should be adequately protected by insulation*



Adequate and Protected Wiring *Wiring should be planned to meet electrical demands of the building and should be properly insulated*

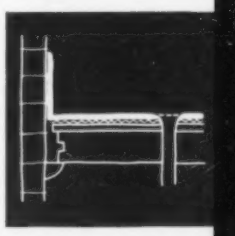


Adequate Water Supply *Either the public water supply should be both plentiful and powerful, or measures should be taken to supplement it*

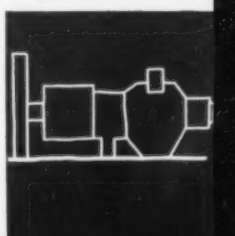


Standpipes *Exterior standpipes should be provided to receive large hose; interior standpipes usually have small hose attached*

Portable Equipment *Fire extinguishers of the proper type should be provided in all areas so that incipient fires can be controlled*



Drained, Watertight Floors *Watertight floors, with scuppers or drains, will protect the building against water damage*



Standby Equipment *Standby generators should be provided to ensure continuance of heat, light and other essential services if power fails*

the building cannot be entered. However, in some instances inside shut-off valves are desirable. This is true in hospitals, where valves located at specified locations in corridors can be reached quickly by hospital personnel if the oxygen supply must be cut off.

INSULATED PIPE

All steam pipes, and any other pipes which carry heated liquids, should be insulated so that they cannot come in contact with any combustible material. They should be especially well protected where they pass through wood partitions.

ADEQUATE, PROTECTED WIRING

If all electrical installations are made in accordance with the specifications of the National Electrical Code, there is almost positive assurance that the building will be well protected against the hazard of electrical fires — except, of course, those that are caused by faulty equipment or misuse of equipment.

The most serious threat in electrical installations today is that of the overloaded circuit. A large safety factor should be planned into each building to allow for an increase in the load. Some current-limiting device, such as a circuit breaker, must also be designed into the system to prevent overheating from an overload. Even though wire is well insulated and protected with cable coverings, overheating can cause it to eat through the insulation and heat the cable covering, thus endangering any combustible material close by.

ADEQUATE WATER SUPPLY

Water is the principal extinguishing medium of fires, and as such should be in adequate supply at all times and available at strong pressures. This has never been so important as it is today, because, with the exodus of many industries to rural areas, oftentimes there is not adequate provision made for reliable supplies of water. In order to assure constant protection in outlying areas, a secondary source of water, such as rivers, lakes and ponds, should be available. In areas where it is not possible to use such sources, the feasibility of installing a pressure tank to supplement the city water supply or gravity tank should be considered.

When water is abundant in both supply and force, its range of projection and thermal properties make it unequalled for controlling fires of all types. The variety of mechanical equipment and varieties of spray and fog nozzles with which it can be applied increase its versatility of extinguishment. It is being perfected to an even higher degree now with the possibility of conditioning it with chemical additives, such as "wetting agents."

STANDPIPES

Standpipes and hose systems are particularly important in multi-story buildings. "Dry" standpipes are usually located on the exteriors of buildings so that they can be hooked up to the main water supply from hydrants and so pump water to the interior standpipes. Interior standpipes often have small hose already attached and ready for use by building occupants. It is desirable that these inside standpipes be recessed into the wall, so that there will be little chance for them to become damaged and perhaps inoperative in time of emergency.

"Wet" standpipes for supplying fire fighting forces, usually from a gravity tank on the building, should be located near exits if possible, so that hose attached to them can be run directly into the building.

PORTABLE EQUIPMENT

Fire extinguishers are, of course, the most used and most practical type of portable fire extinguishing equipment, and they are valuable to have in every building regardless of what other types of equipment are provided. It is especially important to supply them in areas such as kitchens, laboratories and boiler rooms, where flash fires are possible, so that they can be used immediately, before the fire has a chance to gain headway. The original extinguisher has been refined and developed over the years, so that now there is a variety of models available for use on practically any type of fire. The most common types, besides clear water, are foam, soda acid, carbon dioxide, vaporizing liquid and dry chemical. As with inside standpipes, it is desirable to recess portable equipment to reduce its damageability.

Other portable equipment should be considered also. In many industrial buildings, where in-plant fire fighting forces are prepared to attack fires before the fire department arrives, mobile equipment, with well-equipped small trucks, is provided. And there are many areas in which fire axes and other equipment find good use.

DRAINED, WATERTIGHT FLOORS

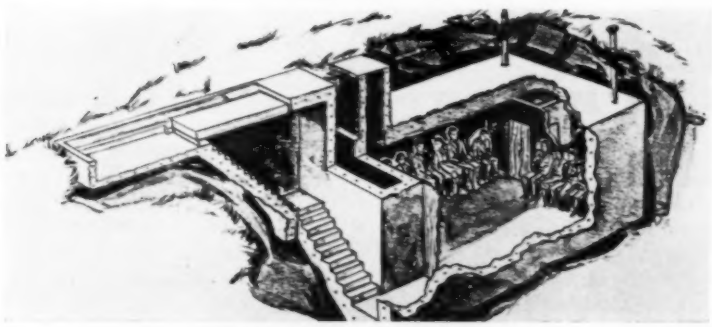
As stated earlier, water damage from fighting fires is often more serious than damage from the fire itself. Water damage can be reduced by installing floor drains or wall scuppers and ensuring that all floors are water-tight. This means that all pipe and conduit holes and floor cracks must be thoroughly caulked. Proper drainage is particularly important in areas in which valuable equipment is located. Watertightness of floors will reduce water damage to the building structure not only from fire fighting but also from common condensation and leakage problems.

STANDBY EQUIPMENT

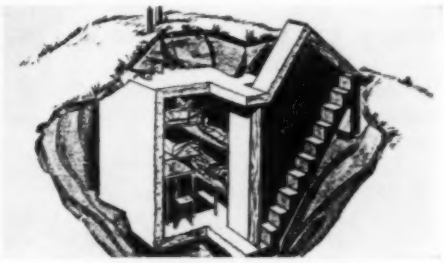
Standby generators should be provided in buildings the size of which warrants them. They are especially important, and urgent, in buildings in which there is the slightest danger that power supply to automatic fire protection equipment will become inoperative. In such an event, auxiliary equipment should be available for immediate use.

MOST FREQUENT CAUSES OF FIRE

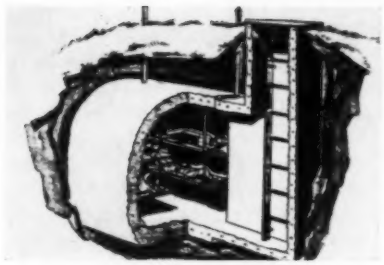
- Smoking and matches
- Careless disposal of trash, hot ashes or coals
- Defective or improperly operated electrical services, fixtures or appliances
- Defective or improperly operated heating equipment
- Defective or poorly installed chimneys or flues
- Inadequate clearance of heating equipment and ducts from combustible materials
- Spontaneous ignition of oily rags or materials
- Explosions
- Open-flame devices (gas appliances, kitchen ranges, laboratory equipment, etc.)
- Special hazards
- Careless handling of flammable liquids or vapors
- Exposure
- Friction and static sparks
- Repair and alteration hazards
- Welding and pipe thawing
- Lightning
- Defective elevator machinery
- Defective incinerators
- Incendiary



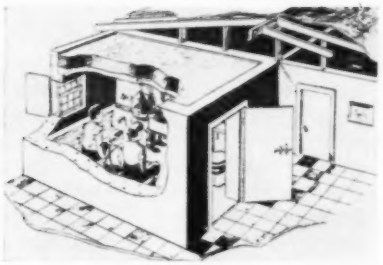
Underground Shelter for 40 Persons



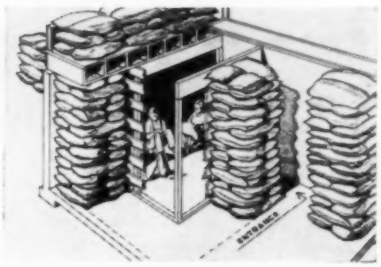
Intermediate Shelter for 4 to 10 Persons



Cattle Pass Pipe Shelter



Reinforced Concrete Bathroom



Fallout Shelter

FCDA PUBLISHES DESIGNS FOR STANDARD BLAST SHELTERS

A SERIES of residential and industrial shelters for protection against blast, heat and radiological effects in areas outside the total-destruction zones of nuclear weapons has been designed by engineers of the Federal Civil Defense Administration. These designs have been issued in keeping with the FCDA's policy of continued urging that residences 10 or more miles from any area that could be a bomb target be equipped with reasonably economical shelters. Shelters are feasible closer than 10 miles from the explosion point of a nuclear bomb, but their cost increases considerably.

The shelter designs were developed on the basis of past test experience and current weapons effects knowledge. They will be furnished without charge by any FCDA office.

Underground Shelter for 40 Persons. This special, heavy-duty shelter was tested at the Operation Cue atomic explosion at Nevada Test Site last May. Based on preliminary evaluation of these tests, it is believed that this shelter would afford adequate protection even in the outer ring of complete destruction surrounding Ground Zero. Designed to withstand an overpressure of 100 psi, the structure is built of reinforced concrete with a 21-in.-thick roof which is 4 ft 7 in. below ground level. The entrance is closed by a sliding slab door of steel and reinforced concrete 8 in. thick, flush with the ground, and this is supplemented with a steel blast door at the bottom of the steps. An alternate way to the surface after an attack is provided by a vertical escape hatch which is filled with sand. A heavy steel trap door at the bottom of the shaft can be opened to let the sand slide into the shelter and so clear the hatch.

Completely equipped with ventilation and its own self-contained power generator, this shelter can be built at a cost (estimated by FCDA) of $15,000 or $16,000. For a larger shelter, to hold 100 or more persons, the cost would be much less per person, since only the lengthening of the shelter room would be necessary. The structural design of this shelter was worked out by Ammann and Whitney, Consulting Engineers, New York City, with FCDA engineers.

Intermediate Reinforced Concrete Underground Shelter for 4 to 10 Persons. This shelter is designed for the peripheral areas of larger cities, the "intermediate" area which must be used if there is insufficient time to permit complete evacuation. It can be built of reinforced concrete or reinforced masonry blocks. The roof is a 6-in.-thick reinforced slab about 2 ft 10 in. under ground level. The entrance is closed with a plywood door 2 in. thick which should withstand an overpressure of 15 psi. It is held down from the inside by turnbuckles to keep it from being ripped off by the suction wave which follows a blast wave. (FCDA estimate: $1100.)

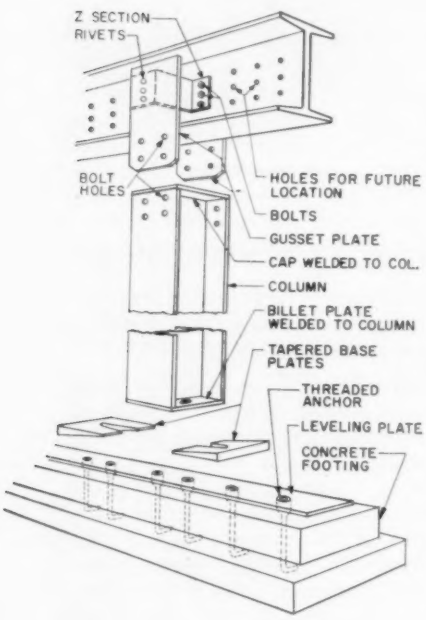
Cattle Pass Pipe Shelter. This shelter is constructed of sections of reinforced concrete pipe or corrugated metal pipe, which is normally used to pass cattle under a highway. The concrete pipe is 6 ft 8 in. in diameter, 6 in. thick and is covered with earth about 2¼ ft deep. The shelter is entered through a vertical shaft and ladder, closed at the top by a plywood door 2 in. thick which should withstand an overpressure of 15 psi. This door is also held down from the inside by turnbuckles. (FCDA estimate: $900.)

Reinforced Concrete Bathroom. In homes which do not have basements, a blast-resistant shelter can be created by making the bathroom walls and ceiling of reinforced concrete 8 in. thick. In Operation Cue, such a reinforced bathroom, tested under an overpressure of 5 psi, remained standing although the one-story frame house containing it was demolished. (FCDA estimate: $500.)

Fallout Shelter. This shelter, which can be built in the corner of a basement, consists of a sturdy framework to support bags filled with earth, sand or similar material. It protects only against radioactive fallout and not against blast effects. Blast protection requires a corner basement shelter of heavier construction (see AR, Sept. 1955, pp. 236–237).

"MOVABLE" COLUMNS INCREASE FLEXIBILITY

STRUCTURAL CHANGES at a fraction of standard cost are offered by Nash Babcock, professional engineer of Old Greenwich, Conn. He has invented and applied for a patent on a "movable" column system which he promises will make possible the enlarging of clear working spaces between columns in existing buildings. What's more, says Mr. Babcock, this structural feat can be performed at a cost of about $500 per column (as opposed to a cost of approximately $25,000 to move a standard column) and can be accomplished overnight (instead of over a period of more than a month). Under normal conditions installation of "movable" columns will not increase original building costs.



The time factor makes this system particularly desirable in industrial buildings, where columns can be moved overnight to accommodate new machinery and production lines without any interruption of normal operations. In other one-story buildings, such as shopping centers, supermarkets and warehouses, areas can be enlarged where desired just as simply. The system can be applied to two-story buildings as well, but original construction costs will be affected slightly to pre-plan the structure for the changes.

The basic components of this system are shown at the left. The beams are of the same depth throughout the structure and are designed as continuous beams. Each beam is pre-punched along its neutral axis, as shown, to receive connections from columns at different locations. Column bearing is taken by a one-way, elongated footing, to the top of which is grouted a leveling plate. Anchors are cast in with the concrete footing to correspond to the pre-drilled beam holes, and they are flush with the top of the leveling plate.

To install the columns, two bolts are placed into a threaded receptacle in the anchor through a billet plate and base plate. At beam height, a gusset plate is welded to a Z-shaped member which is bolted to the pre-drilled holes in the beam. The top of the column is connected to the gusset plates with bolts through four holes in each flange. This arrangement ties the beam to the column with minimum danger of a twist in the beam.

When a column location is to be changed, a new column is first installed where desired, using the pre-drilled bolt-holes in the beam and in the corresponding footing anchors. In order to take up any deflection of the beam which would result from a change in location, two slotted wedge plates are driven up tight between the leveling plate and billet plate and the bolts thoroughly tightened. When the new column is in place, the old column is removed simply by disconnecting the attachments and driving out the wedge-shaped base plates.

There are pre-design features which must be remembered, of course. The beams must be designed for potential future spans using the moment distribution system rather than the simple beam system. Future column location beam holes must be punched as close to the neutral axis as possible, and footings elongated in either a north-south or east-west direction to provide for future column bearing.

The distance a column can be moved will depend on the design of the beam. The flexibility of this system can be applied to wood, steel or concrete and to beams, joists and trusses.

ELECTRONIC GRADING FOR STRUCTURAL WOOD?

STRUCTURAL WOOD MEMBERS in homes, stores, churches, schools, factories and other buildings may be reduced by as much as 50 per cent — with accompanying reductions in cost — with automatic stress grading of lumber. This could be possible, says the National Lumber Manufacturers Association, with new equipment for ultrasonic testing of wood. Demonstrated at the 1955 annual meeting of the NLMA, the equipment consists of an electronic transmitter and receiver. The transmitter sends out electronic impulses which are converted into sound waves by a piece of quartz. These sound waves penetrate the piece of wood being tested at the rate of about 500,000 vibrations per second, some 30 times faster than most human ears can detect. When the sound waves come across something out of the ordinary in the wood — a knot, void or split — it is registered on the receiver, which is a cathode ray tube, by a sharp variation in the normally horizontal line. Present stress grading of structural members is based on the exterior appearance of the lumber, the law of averages, personal opinion and an added safety factor, which often requires an architect to specify a much larger size wood member than is actually necessary.

Sound waves may also be put to another use, predicts NLMA. Once atomic energy developments have reduced power costs, sound waves could be generated to cut lumber, thus eliminating the nuisance of sawdust.

Lower cost wood building products may also be possible with the development of better outlets for wood waste materials. "Concrete boards," which are now widely used in Europe, could be produced by combining wood excelsior with portland cement. This would produce an efficient building block with the natural insulating values of wood and the known qualities of concrete. "Wooden bricks" may be available in the future from short and narrow pieces of lumber and small clear cuttings from lower grades of lumber.

(*More Roundup on page 252*)

Lightweight, cellular concrete supports house at left; thin brick units are nailed onto house at right

MASONRY MATERIALS ARE LIGHTWEIGHT, EASY TO APPLY, ECONOMICAL

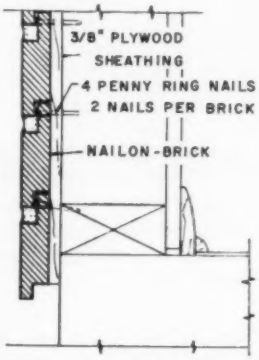
Lightweight Concrete is the important element in the "Elasticrete House" shown above left. *Elasticrete* is a cellular concrete that is said to be strong, self-insulating, highly moisture-resistant and adapted to many uses. Its main ingredient is *Elastizell*, which is compounded of a foaming agent and a water-soluble plastic agent. When these agents are mixed with wet concrete, in a special mixer, the result is a homogeneous cellular or bubble structure of high tensile strength. The process permits a high degree of density control, thus positive control over the factors of weight, strength and insulation.

With these controls, the manufacturer claims that unprecedented savings in weight and handling are possible in multi-storied and residential buildings. As a self-insulating floor slab on grade, it has a low moisture-absorption factor and so can take almost any type of floor covering: cork and rubber tile, linoleum, parquet wood flooring or wall-to-wall carpeting. In multi-story buildings Elastizell concrete floors, with the usual fill depth of 2½ in., are said to save 8 psf over ordinary lightweight aggregate concrete and 15 psf over ordinary concrete. As roof fill, it is highly insulating and minimizes the danger of moisture damage from the underside of the roofing.

In the house shown above, the Elasticrete slab was pumped over warm air heating ducts and electrical utilities. Steel piers were also in place to support the roof of corrugated asbestos concrete board. The walls utilized two courses of stacked 4-in., lightweight, concrete masonry blocks.

A magnified view of the lightweight, cellular *Elasticrete* is shown above right. *Elastizell Corp. of America, 15555 W. McNichols Rd., Detroit 35, Mich.*

Elasticrete is a homogeneous, cellular material of high tensile strength



Nailon Bricks are 1-in.-thick clay elements which are nailed in place

Nailon Brick is the facing on the house shown at right above. The 1-in.-thick "bricks" are of real clay composition and are the same as actual bricks in appearance, texture, size and mortared joints. They can be *nailed directly* to any nailable surface: plywood, wood siding, asbestos siding, stucco and concrete block.

The procedure for applying *Nailon Brick*, as shown in the photograph and drawing at left, is simple. The bottom row of thin brick elements is laid even and then nailed through two holes which are pre-drilled in the brick. Each successive course is fitted over the lips of the bricks in the preceding course and nailed in place. The joint is the same as with ordinary brick, ⅜ in., and is filled with mortar either from a caulking gun or with a trowel or tuck pointer's tool. The horizontal joints are wedge-shaped so that when the mortar has dried, the brick is locked in.

Two sizes of brick are being produced. 2½ by 8 in. and 2½ by 11½ in., to provide both regular and Roman brick effects. A larger brick, 7½ by 15⅞ in., is being tested. The bricks can be applied in any stacked or running bond that is possible with regular brick. An overlapping joint is available for corners which provides a mortared, weathertight joint without need for special corner pieces.

When used in residences, it has been determined that thickness of foundation walls can be reduced from 10 in. to 8 in. Other applications include fireplaces, chimneys and interior walls. Research on the product and its applications was directed by Yost & Taylor, architects, of Kenilworth, Ill. *Ludowici-Celadon Co., 75 East Wacker Drive, Chicago 1, Ill.*

(More Products on page 263)

ELEMENTS OF FIRE-SAFE DESIGN

As mentioned on page 229 of this issue, in the article entitled "Design for Fire Safety," organizations such as the NFPA and NBFU publish a never-ending list of valuable books and pamphlets which cover all phases of fire protection. Some of those available (at a small charge) from the *National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.*, are: "Fires in Hospitals and Institutions," "School Fires," "Fires in 'Fireproof' Buildings," "Protecting Our Heritage — Historic Buildings, Museums and Libraries," "Guide for Explosion Venting," "Must Stores Burn?", "Churches Are Burning." Some of those available from the *National Board of Fire Underwriters, 85 John St., New York 7, N. Y.*, are: "Fire Prevention and Protection as Applied to Hospitals," "Fire Safe School Buildings," "Fire Prevention and Protection as Applied to Hotels," "Fire Hazards and Safeguards for Metalworking Industries," "Fire Safeguarding Warehouses," "Fire Resistance Ratings." Also published by NBFU are the "National Building Code," 1955 edition, and "Building Codes — Their Scope and Aims." Some current manufacturers' literature on "designing for fire safety" is listed below.

Wide World Photos

Fire Protection Equipment. *Allenco Catalog 150* covers steel boxes and bucks, cabinets, carts, connections, couplings, drain connections and plate, extinguishers, fire hose, hydrants, nozzles, racks, reels and other accessories (AIA 29-E-2). *W. D. Allen Mfg. Co., 566 West Lake St., Chicago 6, Ill.**

Fire-resistive Construction. "Furred Metal Lath Ceilings" is the title of *Technical Bulletin 16*, which describes and gives specifications for furred ceilings under steel, concrete and wood joists (AIA File 20-B-1). *Metal Lath Mfrs. Assoc., Engineers Bldg., Cleveland 14, Ohio.**

Automatic Detection. *Detect-a-Fire* thermostats in electric temperature control and detection devices are described in a 4-page bulletin (AIA File 31-I-31) from *Fenwal Inc., 218 Pleasant St., Ashland, Mass.*

Special Hazard Protection. A 28-page booklet offers a thorough presentation of various automatic fire detection and fire protection installations for special hazard areas. It includes also a fire control and extinguishment chart for various occupancies. Bulletin 73. *"Automatic" Sprinkler Corp. of America, Youngstown 1, Ohio.*

Fire Extinguishing Systems. Rate-of-rise type, pressure-operated, carbon dioxide fire extinguishing systems, with accessory equipment, are described in a 16-page booklet from *Walter Kidde & Co., Inc., Belleville 9, N. J.*

Sprinklers. Various types of automatic sprinkler heads are described and explanations given of wet, dry, rate-of-rise and deluge systems in a 20-page booklet published by *Grinnell Co., Inc., 260 West Exchange St., Providence 1, R. I.*

Fire Alarm Systems. Selective code systems, fire alarm boxes, general alarm systems and fire alarm signals are presented in an 8-page illustrated brochure. Waterflow alarm systems, for protection against water damage, are also described. *The Autocall Co., Shelby, Ohio.*

Fire-resistive Construction. Fire-retardant and vapor-resistant built-up roofs for application over steel deck, poured or precast concrete deck or wood-deck are described, with specifications, in an 8-page brochure (AIA File 12-A-1) from *Lexsuco Inc., 4815 Lexington Ave., Cleveland 3, Ohio.**

Venting. Automatic fire venting with *Pyrodomes* and *Pyrovents*, which open automatically when a thermostatic element is actuated, is discussed, with diagrams, in an 8-page bulletin from *Wasco Products, Inc., Cambridge, Mass.**

Automatic Detection. *Fireye* detection systems, which transmit an electrical signal as soon as a sensitive element is exposed to infra-red radiation, are described, with standard specifications, in an 8-page brochure (AIA File 31-I-31) from *Electronics Corp. of America, 77 Broadway, Cambridge 42, Mass.*

Automatic Detection. A new radioactive pre-detector system is the subject of a 4-page bulletin which describes the operation of a radioactive element in detecting either visible smoke or invisible gases over a large area, thus activating alarm signals. *Pyrene — C-O-Two, Newark 1, N. J.*

Plaster Fireproofing. An 8-page brochure on *Perlite* insulating aggregate for concrete and plaster includes tables of fire ratings of Perlite constructions for structural steel columns, floors and ceilings, and walls and partitions (AIA File 21-C-1). *Perlite Institute, 45 West 45th St., New York 36.**

Fire Protection Equipment is the title of *Elkhart Catalog 55*, which covers cabinets, hose racks and reels, valves, standpipe siamese and accessories, nozzles, extinguishers, hose house and accessories, couplings and line hose (AIA File 29-E-2). *Elkhart Brass Mfg. Co., Inc., Elkhart, Ind.*

Fire-resistive Construction. A 20-page manual on *Cofar*, a deep-corrugated, high-strength, galvanized steel sheet which functions also as temperature reinforcement as well as a form for reinforced concrete floor and roof slabs, presents photos, details, selection tables, fire ratings, design principles and specifications (AIA File 4-E-4). *Granco Steel Products Co., 6506 North Broadway, St. Louis 15, Mo.**

* *Other product information in Sweet's Architectural File, 1956.*

(Continued on page 302)

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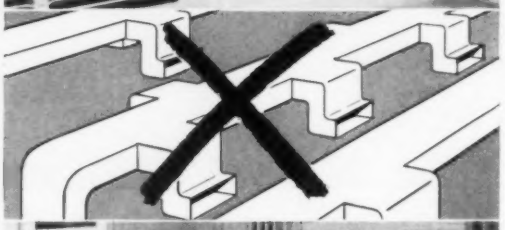

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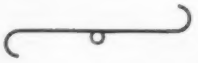

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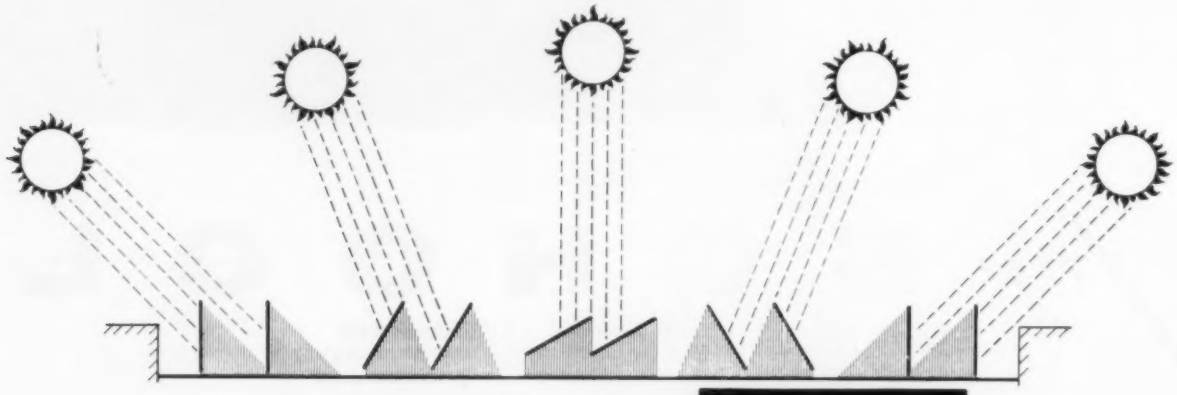

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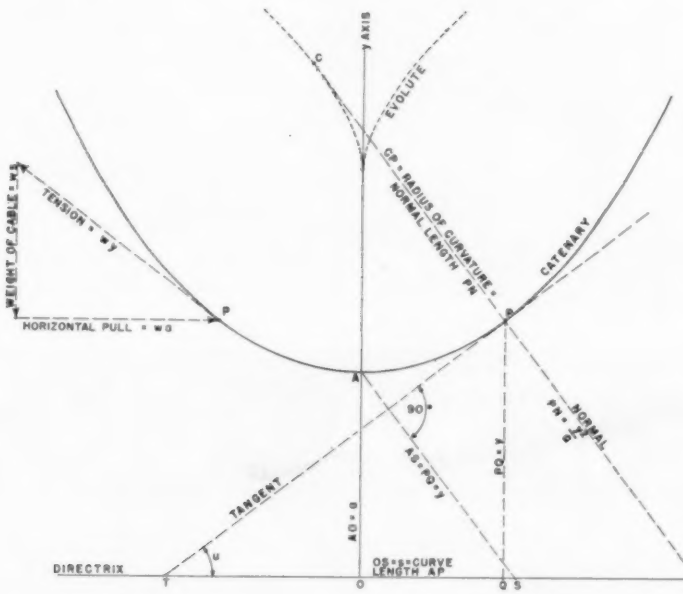
B

USEFUL CURVES AND CURVED SURFACES: 7—Catenary

By SEYMOUR HOWARD *Assistant Professor, Pratt Institute, Architect associated with Huson Jackson and Harold Edelman*



CURVE LENGTH

To find the length of the curve from apex to point P_1 swing arc from A equal in length to y, intersecting the directrix at S. OS = length of curve. AS is parallel to normal and can be used to construct the tangent and normal.

$$\tan u = \frac{s}{a} = \sinh \frac{x}{a}$$

$$\text{TQ subtangent} = \frac{ay}{s} = a \coth \frac{x}{a}$$

$$\text{QN subnormal} = \frac{ys}{a} =$$

$$a \cosh \frac{x}{a} \sinh \frac{x}{a}$$

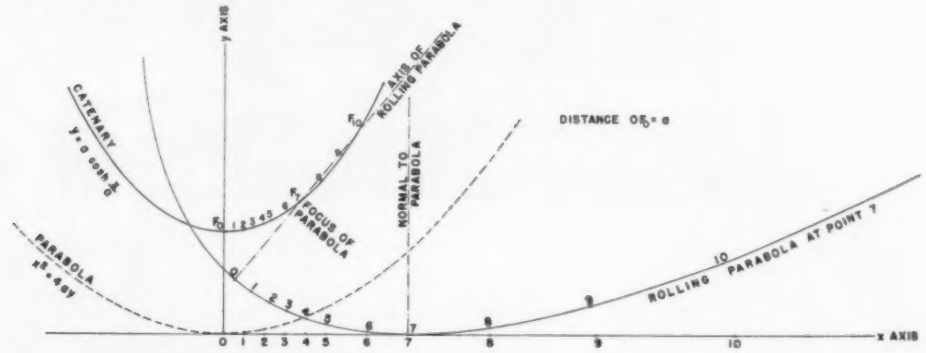
DEFINITION

The catenary is the curve described by a perfectly flexible cord of uniform weight, hanging freely between two supports. All catenaries have the same shape and differ only in scale (size). The measure of this scale is the parameter "a," which is the distance from the apex to the directrix.

The relationship between the tension at any point in the cable and the horizontal and vertical components are shown above. w = weight of cable per unit of length.

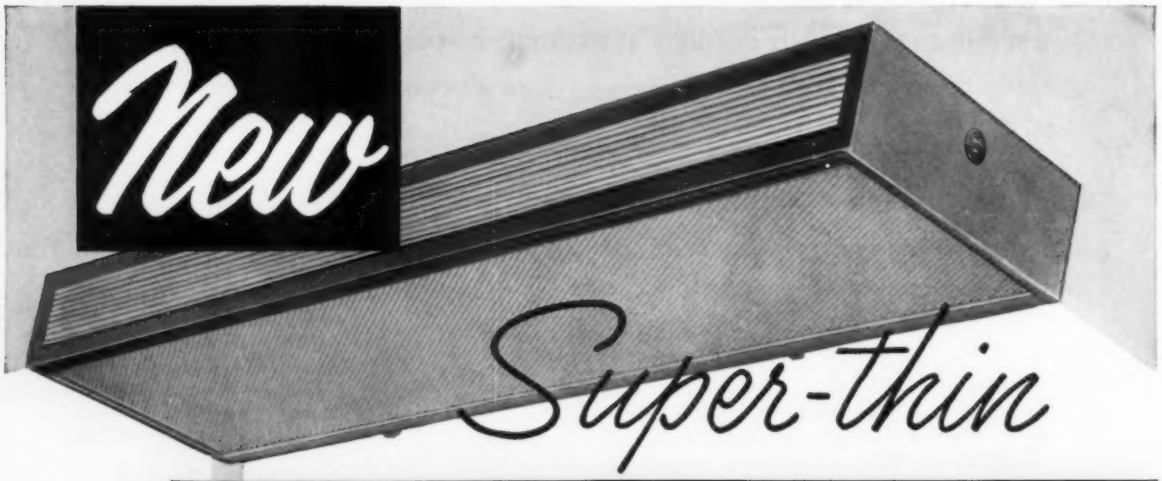
Upside down, the catenary is also the curve of the pressure line of an arch of uniform cross section, loaded only by its own weight. When the catenary is reversed, what is tension in the cable becomes compression in the arch.

METHODS OF DRAWING: THE CATENARY AS THE ROULETTE OF A PARABOLA

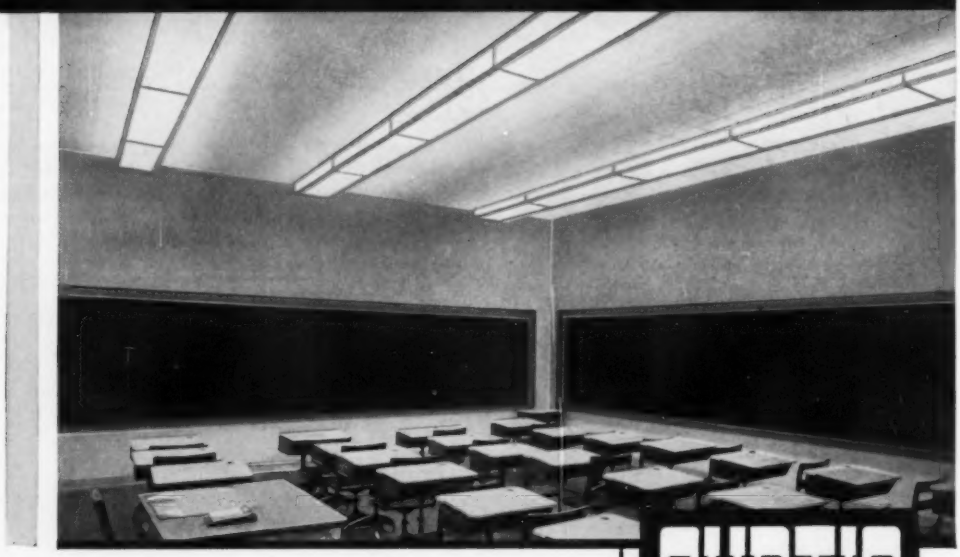

y AXIS
AXIS OF ROLLING PARABOLA
CATENARY
y = a cosh x/a
DISTANCE OF = a
FOCUS OF PARABOLA
NORMAL TO PARABOLA
PARABOLA x² = 4ay
ROLLING PARABOLA AT POINT 7
x AXIS
0 1 2 3 4 5 6 7 8 9 10

The catenary may be drawn by calculating points for the equation $y = a \cosh \frac{x}{a}$ and joining points, or it can be generated directly by rolling a parabola along the directrix. In either case the parameter "a," must be determined. As this is a trial and error procedure, the values of a in terms of SAG/SPAN ratios have been calculated and can be found directly from the graph on sheet 9. Having determined "a," the catenary can be drawn directly by first drawing a parabola with a parameter of 4a (2p in the notation on parabolas, previously published), shown here as the parabola $x^2 = 4ay$. The parabola is then rolled along the x axis as shown above and its focus will describe the desired catenary.

This is known as a roulette curve (cycloids are the most well known roulettes). The only practical difficulty consists in preventing the rolling curve from slipping as it is rolled. The curve which is to be rolled (in this case the parabola) should be drawn on a piece of tracing paper. Make a hole in the paper at the point whose locus is sought (in this case the focus). Draw the curve (in this case the x axis) along which the curve is to be rolled on another piece of paper. Mark points along the length of the parabola and draw normal (and/or tangent) at each point. Mark points at the same distances measured along the straight line and draw normal at each point. Roll the parabola along the straight line, matching points and lining up normals (and/or tangents) at each point. Mark through the hole the corresponding point of the roulette (in this case the catenary).



New Super-thin VERSA-LUX



Curtis Versa-Lux is a versatile beauty. Super-thin, Versa-Lux is in perfect cadence with new low ceiling designs, harmonizing with any decorative motif. Units available with a molded polystyrene plastic egg-crate louver, three different Holophane Controlenses—6016, 9016 and 9033-9034—or Corning Alba-Lite ribbed diffusing glass panels and plastic or glass side panels. All metal parts finished baked white "Fluracite" enamel.

This original Curtis design is as practical as it is beautiful. Just 3⅞" thin and 12" wide, Versa-Lux will replace a 12" ceiling tile, so that it can be partially recessed, mounted directly to the ceiling, or pendant hung, in continuous lines or individually.

The door is supported by three steel hinges on which it may be lowered or completely removed without the use of tools. Three turn latches securely hold the door in position. Clear plastic hinges and turn latches are used with the plastic egg-crate louver.

Architects, designers and engineers seeking a unit for performance, versatility and beauty are making this newest Curtis luminaire their unanimous choice.

For complete illustrated data on the Super-thin Versa-Lux, write Dept. C3-VL.

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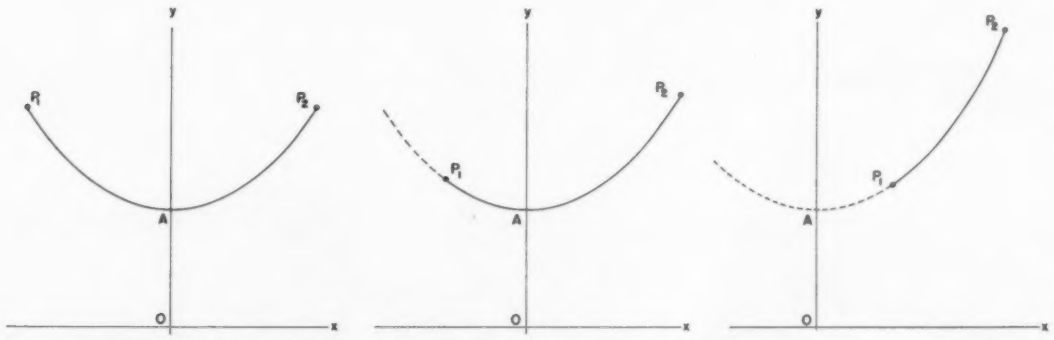
USEFUL CURVES AND CURVED SURFACES: 8—Catenary

By SEYMOUR HOWARD *Assistant Professor, Pratt Institute, Architect associated with Huson Jackson and Harold Edelman*

PROBLEMS OF THE CATENARY FALL INTO THREE GENERAL CASES:



CASE I: BOTH SUPPORTS AT SAME LEVEL

CASE II: SUPPORTS AT DIFFERENT LEVELS, LOW POINT IN BETWEEN

CASE III: SUPPORTS AT DIFFERENT LEVELS, NO LOW POINT BETWEEN

1. If locations of P_1, P_2 and A are known, the SAG/SPAN ratio can be calculated and the parameter "a" found from curve on sheet 9, p. 249.

2. If only the locations of P_1 and P_2 are known, some additional information must be available. This may be:

a. The length of the curve between P_1 and P_2. With this it is possible to find "a" by trial and error graphically, remembering that the shape of the catenary is fixed and that the problem is one of scale. Over a catenary curve which has been accurately drawn, establish points P_1 and P_2 to some scale. The angle between the line which joins them and the y or x axis will be fixed. Measure the distance from P_1 to P_2 along the curve to this same scale. If this distance is less than the given distance, the points P_1 and P_2 must be moved higher (keeping their relative positions the same). (If greater, the points must be slid down the curve.) The correct scale for the new position must be worked out, the length along the curve measured according to the new curve and so on. When the scale is correct, measure the distance from A to O using this scale, and you will have the correct "a." This procedure can also be done algebraically, solving $S = a \sinh \frac{x}{a}$ by trial and error for each of the two distances P_1 A and P_2 A.

b. The tension in the cable and the weight per unit of length. Since $y = \frac{\text{tension}}{\text{unit weight}}$, the distance from P_1 or P_2 to the x axis can be found, and by adjusting the scale and drawing over an accurate curve, the apex A can be found and the parameter "a" calculated.

NOTES

TABLES OF HYPERBOLIC FUNCTIONS CAN BE FOUND:

1. "Smithsonian Mathematical Tables: Hyperbolic Functions," Pub. No. 1871, Gov. Printing Office, 1909, gives values to 5 decimal places
for $x = 0.0001$ to $x = 0.1000$
for $x = 0.001$ to $x = 3.000$
and for $x = 3.00$ to $x = 6.00$

2. "Tables of Circular and Hyperbolic Sines and Cosines for Radian Arguments," published as a WPA project, New York, 1939, gives values to 9 decimal places
for $x = 0.0001$ to $x = 1.9999$
and for $x = 2.0$ to $x = 10.00$

CATENARY AS ROULETTE OF PARABOLA

The demonstration of the catenary as the roulette of a parabola was first made by James Clerk Maxwell, "Theory of Rolling Curves," Transactions Royal Soc. Edin., Vol. XVI, Part 5 (1849), republished in "Scientific Papers of James Clerk Maxwell," edited by W. D. Niven, Dover Pub., New York, 1952.

ERRATA for Sheets 1, 3 and 5

Sheet 1: First paragraph. In lieu of "geodesic surfaces," read "geodesic lines on surfaces."

Sheet 3: (a) Paragraph explaining method of drawing parabola by heights of ordinates. After "All parabolas have the same shape, differing only in scale" add "Note these relations hold true no matter what the height to width ratio, provided the apex is included."

(b) Length of arc from origin to point x_1, y_1. The denominator in the expression between brackets should be p instead of 2.

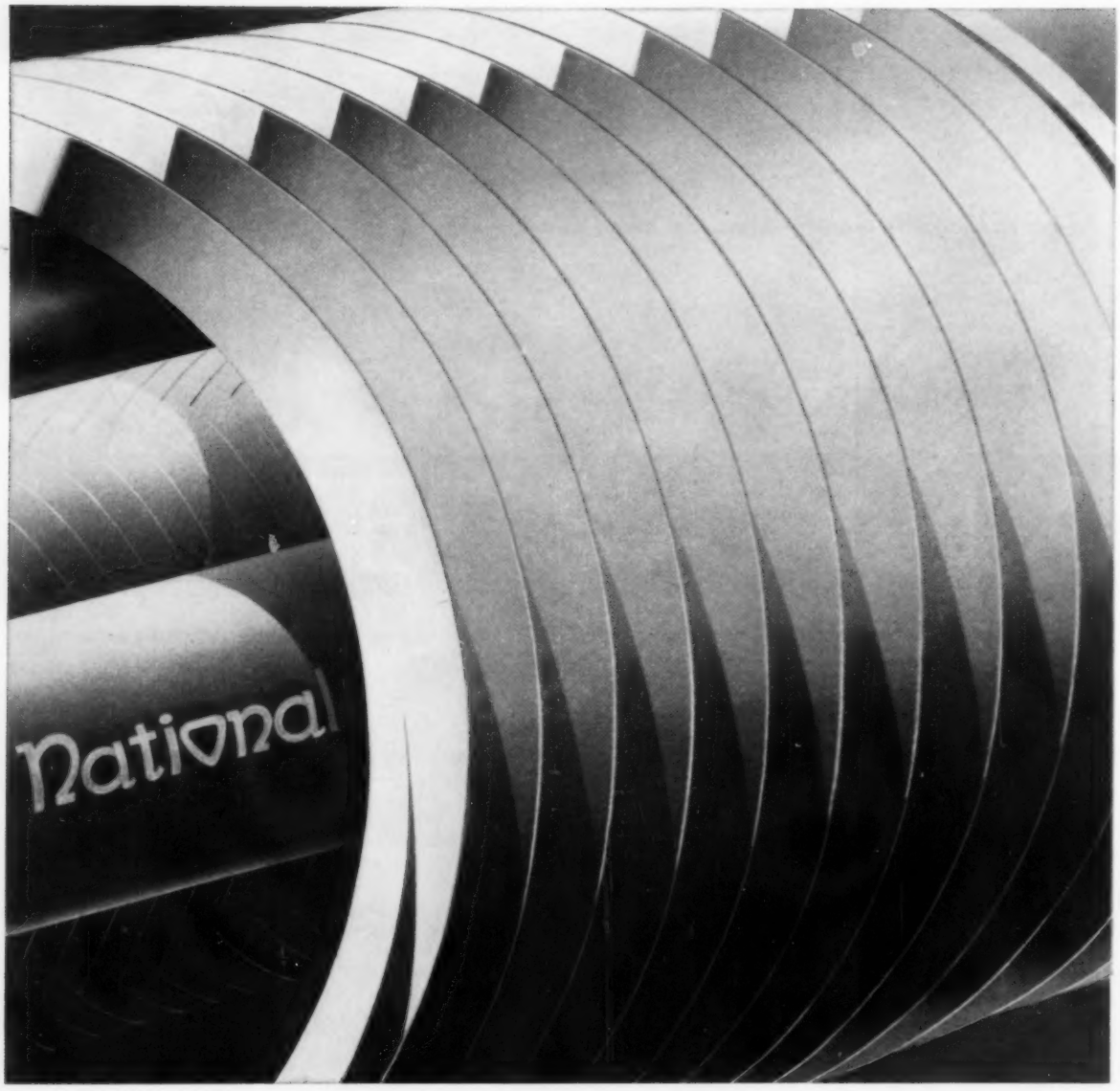
(c) In paragraph explaining how to find center of curvature, read "by setting off subnormal M_1N_1," in lieu of "setting of."

(d) Add to the same paragraph "Center of curvature can be found also by same procedure as for ellipse and hyperbola: PN_1, N_1Q, QC_1 (see Sheet 5, Evolute of Ellipse).

Sheet 5: (a) Equation of Evolute (Standard Form) read $a^{2/3} \times {}^{2/3} + b^{2/3} y^{2/3} = (a^2 - b^2)^{2/3}$

(b) Centroidal Axis, read "$Y = \frac{R \sin \alpha}{\alpha}$"

(c) Moment of Inertia; close brackets after $-\frac{2 \sin^2 \alpha}{\alpha}\Big]$



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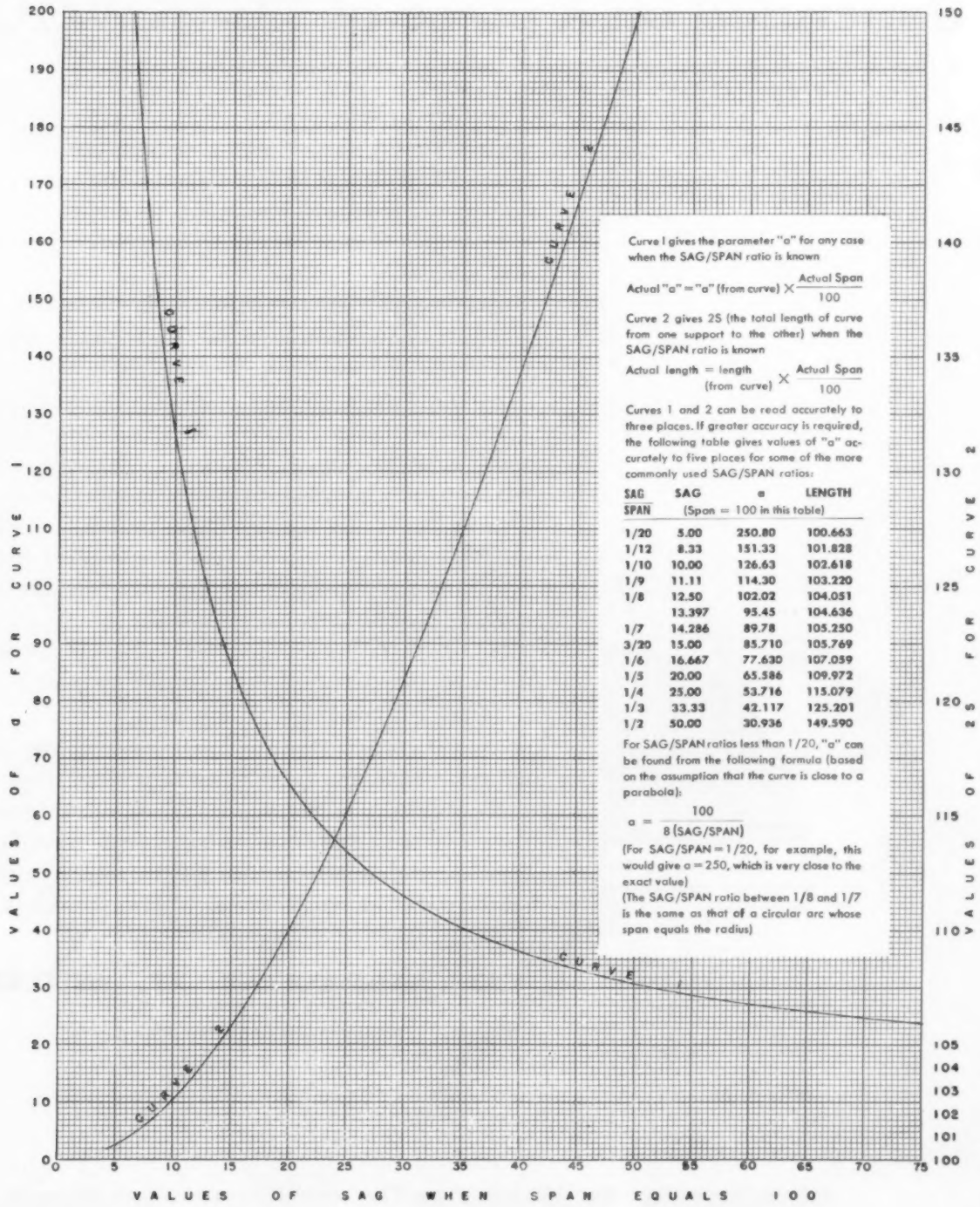
(To be continued in a later issue)

USEFUL CURVES AND CURVED SURFACES: 9—Catenary

By SEYMOUR HOWARD *Assistant Professor, Pratt Institute, Architect associated with Huson Jackson and Harold Edelman*



Curve 1 gives the parameter "a" for any case when the SAG/SPAN ratio is known

$$\text{Actual "a"} = \text{"a" (from curve)} \times \frac{\text{Actual Span}}{100}$$

Curve 2 gives 2S (the total length of curve from one support to the other) when the SAG/SPAN ratio is known

$$\text{Actual length} = \text{length (from curve)} \times \frac{\text{Actual Span}}{100}$$

Curves 1 and 2 can be read accurately to three places. If greater accuracy is required, the following table gives values of "a" accurately to five places for some of the more commonly used SAG/SPAN ratios:

SAG/SPAN	SAG (Span = 100 in this table)	a	LENGTH
1/20	5.00	250.80	100.663
1/12	8.33	151.33	101.828
1/10	10.00	126.63	102.618
1/9	11.11	114.30	103.220
1/8	12.50	102.02	104.051
	13.397	95.45	104.636
1/7	14.286	89.78	105.250
3/20	15.00	85.710	105.769
1/6	16.667	77.630	107.059
1/5	20.00	65.586	109.972
1/4	25.00	53.716	115.079
1/3	33.33	42.117	125.201
1/2	50.00	30.936	149.590

For SAG/SPAN ratios less than 1/20, "a" can be found from the following formula (based on the assumption that the curve is close to a parabola):

$$a = \frac{100}{8\,(\text{SAG/SPAN})}$$

(For SAG/SPAN = 1/20, for example, this would give a = 250, which is very close to the exact value)

(The SAG/SPAN ratio between 1/8 and 1/7 is the same as that of a circular arc whose span equals the radius)

When the fate of nations... depended on a piece of TEAKWOOD

K'wan Gung, legendary warrior of old Cathay was noted for valor and prodigious feats of arms. His saga, in song and verse—from ancient records, tells of his love for personal combat. His venerated spear, like the sword Excalibur of King Arthur, had a reputation. Its shaft was of polished teakwood and withstood the shocks of over 500 personal combats.

K'wan's custom was to settle an issue with a rival nation by dueling with its leader while both armies watched. Thousands of lives were thus saved. K'wan was only as strong as the shaft of his spear—his own life and the fate of both nations depended on the sturdy teakwood. "It hardened with age," says the legend, "and when K'wan died went to his son".

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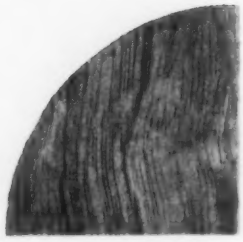

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RARE WOODS
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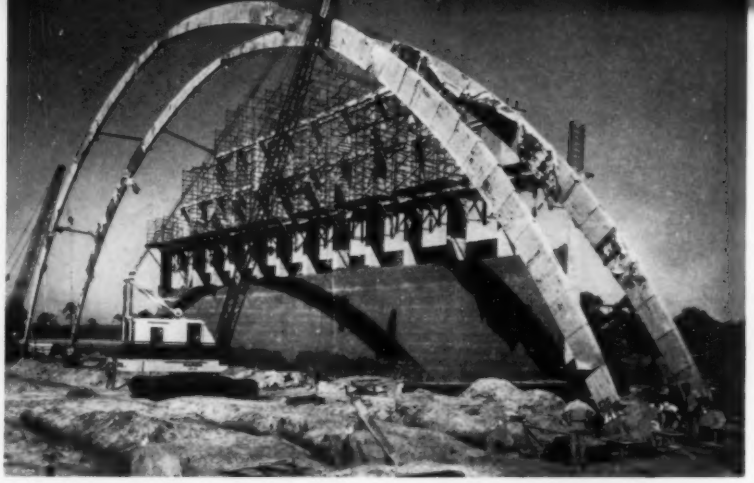
(Continued from page 238)

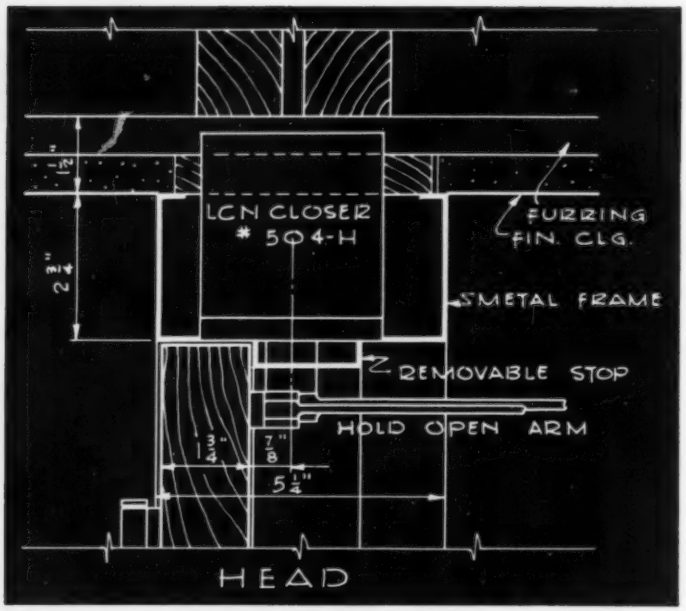
LARGEST WOOD ARCHES ARE SPLICED AT QUARTER POINTS

Twelve laminated wood arches with a clear span of 247 ft support the new Jai Alai Fronton in West Palm Beach, Fla. Said to be the largest glued, laminated wood arches ever manufactured, they were delivered in quarter sections, thus overcoming the problems that would be involved in handling and shipping the complete arches. As shown in the photograph directly below, a special splice joint was used at the quarter points of the arch. This splice was accomplished by using ½-in.-thick steel plates, 12 ft long on top of the arch and 6 ft long on the bottom. These plates were joined to the arch by 100 shear plates at each splice. The crown connection and the two base connections are hinges. Both splices and hinges were applied at the site. Each half of the arch was attached to the base connection while lying on the ground. Two mobile cranes then lifted the two halves, rotating them about the base hinges until the crown hinge was in correct alignment. Insertion of the crown hinge pin completed the erection. As each arch was erected, it was tied to the adjacent arch with 4 struts.

The arches vary in depth from 26 in. at the base to 46 in. at the point of maximum stress to 22 in. at the crown, where the height is 80 ft. Each arch weighs over 15 tons, contains 17,000 board ft of Southern pine lumber and measures 340 ft along its circumference. Wood decking, 3½ in. thick, attached directly to the arches eliminated the need for purlins and other bracing. Architects of the Fronton were Spicer and Gehlert of Daytona Beach. Structural engineer was J. G. Moore.

(Continued on page 257)





CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Installation Shown on Opposite Page

The LCN Series 500 Closer's Main Points:

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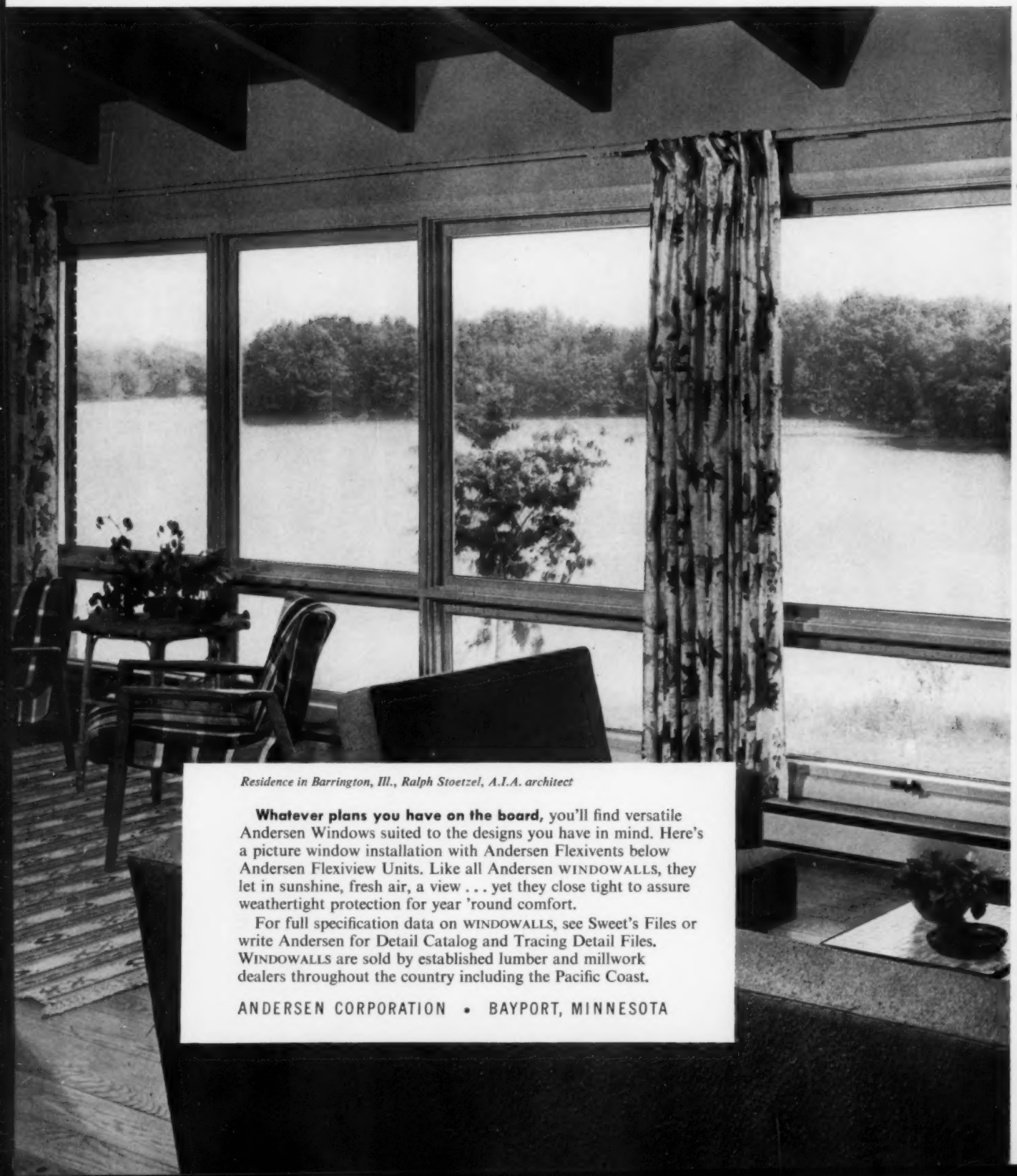
Construction Details on Opposite Page

Take the long view... framed with window beauty



Residence in Barrington, Ill., Ralph Stoetzel, A.I.A. architect

Whatever plans you have on the board, you'll find versatile Andersen Windows suited to the designs you have in mind. Here's a picture window installation with Andersen Flexivents below Andersen Flexiview Units. Like all Andersen WINDOWALLS, they let in sunshine, fresh air, a view . . . yet they close tight to assure weathertight protection for year 'round comfort.

For full specification data on WINDOWALLS, see Sweet's Files or write Andersen for Detail Catalog and Tracing Detail Files. WINDOWALLS are sold by established lumber and millwork dealers throughout the country including the Pacific Coast.

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INSULATION news from L·O·F GLASS FIBERS COMPANY

High tensile strength of 1-inch Super·Fine blankets permits them to be pulled between duct and wall without tearing. Application: Combination heating and cooling ducts at Northwood Shopping Center, Royal Oak, Mich. Architect: Louis A. Redstone; associate architect: Allan G. Agree.

New shopping center benefits in 3 ways with efficient Super·Fine duct insulation

Like architects Louis Redstone and Allan Agree, you will find that L·O·F Glass Fibers' Super·Fine duct insulation offers three important advantages to your clients . . .

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TECHNICAL ROUNDUP

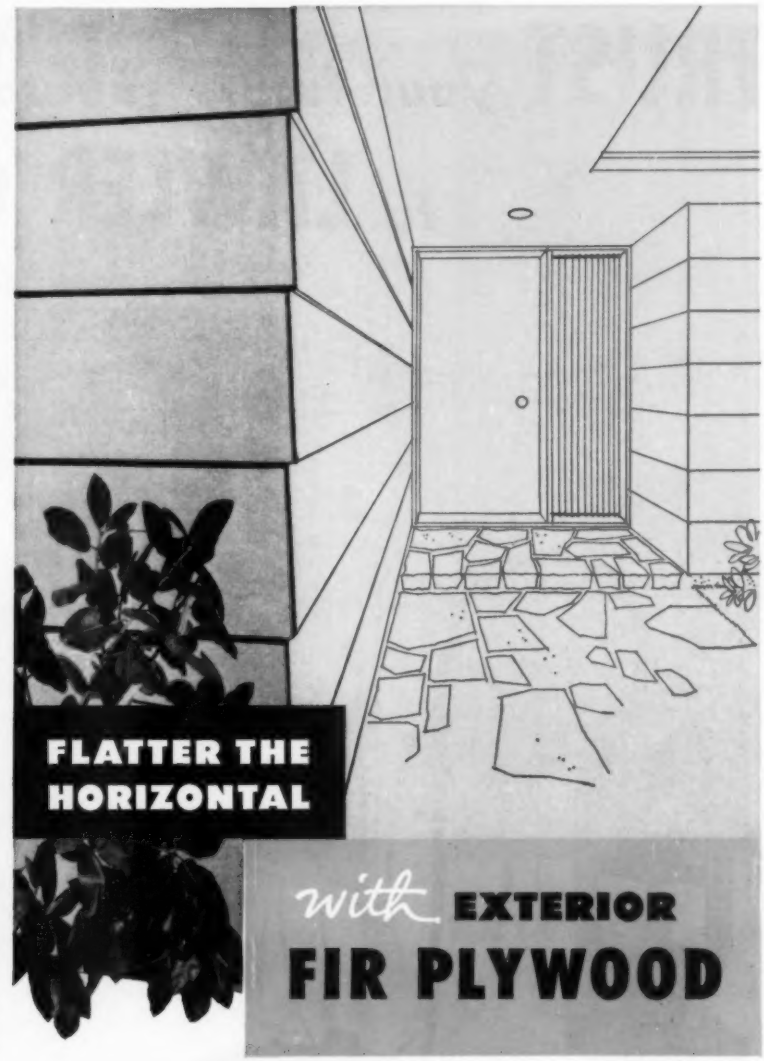
(Continued from page 252)

Customized Housing. Architects in Texas, Oklahoma, Colorado, New Mexico, Arkansas and Louisiana are being invited to submit plans to the Texas Housing Company of Dallas for consideration in a new plan for "customized" housing. The plans will be engineered, processed and scheduled for factory production in any quantity at large savings in cost. Basic materials used in the construction of all homes, regardless of design, such as studs, walls, trusses and windows, are pre-cut and panelized, then shipped on a flatbed trailer to the site ready for assembly by the contractor.

Firehouse Slides. The old brass pole used for so many years in firehouses, is being replaced by slides. Firemen, when called from second floor quarters, can now slide comfortably down stainless steel slides and minimize the likelihood of suffering from broken ankles and shoulder bones. The stainless steel slide shown above, believed to be the first of its kind, is in the Birmingham, Mich., Fire Station.

High Strength Bolts. The Building Committee of the Council of the City of New York has approved a bill with amendments to authorize the use of high strength bolts in steel construction. Up to now they have been permitted in the city only by special dispensation of the Department of Housing and Buildings. The bill will be considered at the Council's next meeting on November 7 of this year, and it is expected that it will be passed unanimously. The amend-

(Continued on page 259)



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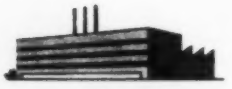
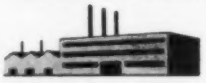


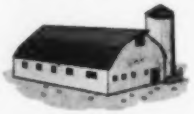
IN FACTORIES

POWER PLANTS

COMMERCIAL BUILDINGS



PROCESSING PLANTS



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SHIPS

. . . Wherever Steam is Used

Type "S" Thermostatic Temperature Regulator for automatically regulating the flow of liquid or steam through a valve . . . such as in the diesel engine illustrated above.

Lawler's "Performance-Tested" design combines pioneering experience with engineering leadership. The use of specially chosen metals assure YOUR customers years of positive, accurate temperature control with lowest maintenance cost . . . the best insurance YOUR REPUTATION can have.

The Lawler Line **of Thermostatic Controls**

LAWLER AUTOMATIC CONTROLS, INC. 453 North MacQuesten Parkway, Mount Vernon, N. Y.

(Continued from page 257)

ment approved by the Building Committee provides that the use of the bolts is to be regulated and supervised by the Department of Housing and Buildings, which will handle applications for use of the bolts as they handle any application for a building permit. The regulations will probably be concerned largely with the quality of the bolts and the frequency of calibration of the impact wrenches that are used to turn the nuts that fasten them.

Atomic Heating. An important milestone in the development of peacetime uses of atomic energy has been reached at the Atomic Energy Commission's Hanford atomic plant, where tremendous quantities of waste heat generated by atomic reactors are being used for large-scale heating. General Electric scientists and engineers at the plant are transferring heat from water used to cool the atomic reactors to air conditioners in several Hanford buildings. Equivalent heat would be sufficient to fill the needs of more than 1000 average-size homes. Adequate precautions are taken to prevent any leakage of radioactive water into the heating system. The entire installation is expected to save $59,000 annually in fuel costs. The higher initial cost of the system over the cost of a conventional heating plant is expected to be defrayed in a few years. Design of the plant was carried out by General Electric engineers and C. T. Main, Inc., architects and engineers of Boston.

Solar Heat — Correction.
The solar house, designed by architect James M. Hunter with solar heating system engineered by Dr. George O. G. Löf, which was discussed on page 228 of the November 1955 ARCHITECTURAL RECORD, should be entitled "Pitched Plate Collectors on Flat Roof" instead of "Horizontal Plate Collector." The collector panels, although flat, are pitched at a steep angle of about 55 deg, extending from the flat roof upwards a distance of 6 ft. Two such panels pitched at this angle, each 6 ft by approximately 45 ft, run in an east-west direction in the area of the roof designated as "heat trap" in the drawing on page 229. The slightly raised wall around the area is a low parapet for architectural attractiveness.

(Continued on page 261)

SPECIFY EXTERIOR PLYWOOD and BATTEN SIDING to add a crisp, well-tailored look to contemporary or ranch-style homes. Big panels give you unusual design flexibility. Battens can be spaced to line up exactly with windows or other openings. Exterior plywood siding cuts application time up to one-third. Won't split or puncture. Panels ⅜" thick meet FHA requirements for application as *combined* siding-sheathing.

FREE PORTFOLIO OF EXTERIOR FIR PLYWOOD DESIGNS

File folder assembly contains design ideas, application, specification data. Write (USA only) Douglas Fir Plywood Assoc. Dept. AR, Tacoma 2, Washington.

DFPA TESTED QUALITY
EXT-DFPA

INSIST ON DFPA GRADEMARKS!

For Outdoor Use, Specify EXT-DFPA Exterior Plywood: 1. standard **Plyshield** grade for soffits, gable ends and low cost siding; 2. **Overlaid panels** (finest paint base for check-free finishes); 3. **Texture One-Eleven** "grooved" panels.

WSP

Exterior plywood of other western softwoods also available; look for this DFPA grademark.

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Plan for AIRTEMP Air Conditioning—it's virtually trouble-free!

No "bugs" to be worked out—*you're sure of perfect performance always* because every AIRTEMP job is backed by 21 years of advanced engineering by *Chrysler*. Whether your needs are large or small, the complete AIRTEMP line will meet your every requirement.

In determining the *one best* system for any building, in planning the layout and in the actual installation . . . you can count on expert guidance from top engineers of Airtemp Construction Corporation. And to *guarantee* your installations during the years to come, the nation-wide network of AIRTEMP personnel provides dependable service in every major community.

As the years go by, your clients will have tangible evidence of your wisdom in specifying AIRTEMP. They will appreciate particularly the low operating costs that result from modern, efficient design.

For full information on how AIRTEMP can meet all of *your* air conditioning needs, write: Airtemp Construction Corp., Dayton 1, Ohio.

AIRTEMP BUILDS AIR CONDITIONING TO FIT EVERY REQUIREMENT

THE *FORWARD* LOOK IN AIR CONDITIONING

A FEW AIRTEMP DREAMS THAT BECAME REALITIES!

Union Pacific Building
Omaha, Nebr. Architect: Davis Hunt, Chicago; Engineers: Ritter & Mott, Chicago; Contractors: James Stewart & Co.

Magnolia Building
Dallas, Texas. Air conditioned in 1938. Architects and Engineers: Lang & Weichel.

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CONSTRUCTION CORPORATION
SUBSIDIARY OF CHRYSLER CORP.

AIR CONDITIONING • HEATING FOR HOMES, BUSINESS, INDUSTRY

TECHNICAL ROUNDUP

(Continued from page 259)

Hospital TV to enable nursing supervisors to scan patients at any time without disturbing them was envisioned as an imminent technique by Robert W. Butler, partner in the architectural firm of Skidmore, Owings & Merrill, at a recent meeting of hospital designers in New Orleans. "Closed circuit color television has already found an important niche in medical education," stated Cutler, and this will be one more of the many new electronic aids that are rapidly being adopted by the medical profession.

Radiant Cooling from an acoustical ceiling will relieve the heavy load on a new air conditioning system being installed in the Port of New York Authority Building. Originally built as an industrial building, with pillars supporting each floor, the structure has large window areas on all sides for light and ventilation. Since the sun pouring through these windows would throw an almost intolerable burden on the air conditioning system, it was decided to install a Burgess-Manning radiant cooling ceiling in strips between 14 and 20 ft wide along the southern and eastern sides of the building where the heat was most intense. Cooling results from the circulation of cold water through coils from which perforated metal pans are clipped. The maximum of acoustic control as well as thermal insulation is provided by a blanket of glass fiber which covers the water coils. Engineers calculate that the perimeter ceiling will relieve the air conditioning load by a minimum of 17 Btu per sq ft.

Installation of the ceiling is shown in the photograph above, where a workman is snapping a perforated aluminum panel to a water coil in a patient's room at Mercy Hospital in Rockville Center, Long Island. The radiant ceiling installation in the hospital (Eggers & Higgins, architects) is for heating instead of cooling. In many installations the system is utilized for both heating and cooling.

SPECIFY TEXTURE ONE-ELEVEN to give your homes new buy-appeal. This smart "grooved" plywood combines line and texture to create dramatic pattern of highlight and shadow. Use it for siding, as combined siding-sheathing, or to accent other materials. Goes up quickly; shiplap edges neatly conceal vertical joints. Grooves are full ¼" deep, ⅜" wide, have sharp, clean-cut edges.

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DFPA® TESTED QUALITY EXT-DFPA®

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For Outdoor Use, Specify EXT-DFPA® Exterior Plywood: 1. standard **Plyshield®** grade for soffits, gable ends and low cost siding; 2. **Overlaid panels** (finest paint base for check-free finishes); 3. **Texture One-Eleven®** "grooved" panels.

WSP

Exterior plywood of other western softwoods also available; look for this DFPA grademark.

YOU KNOW YOUR GENERAL CONTRACTOR...

who are his "subs"?

If you permit your general contractors to submit bids without telling you the names of the subcontractors these bids are based on – you are leaving the door open for "bid peddling." If you know the "subs," the general contractor can't change later to others who are willing to cut prices – and quality.

Know your "subs"

– better yet, ask general contractors to get bids only from subcontractors you approve in the first place. And, for the plumbing contract – your best bet is a contractor who belongs to the National Association of Plumbing Contractors. By their membership, these plumbing contractors publicly announce conformance to the rigid standards N.A.P.C. has developed.

You always know – when an N.A.P.C. member does the plumbing – that you get the best job available, at a fair price.

Control quality throughout your buildings — know your "subs"!

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NATIONAL ASSOCIATION *of* PLUMBING CONTRACTORS

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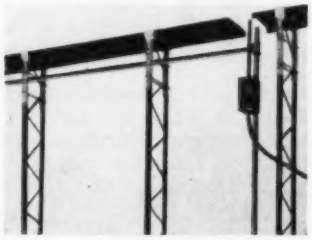
PRODUCT REPORTS

(Continued from page 239)

Fire Exit Lock and Alarm System which can be attached to any type of emergency door, provides a means of escape in event of an emergency and yet prevents serious inventory and property loss or unauthorized "time breaks." The lock, constructed of aluminum and cast bronze, contains an alarm bell, lock and spring mechanism. Only 10 lb of pressure on a metal striker breaks a glass panel which releases the lock and activates an alarm bell. Panic bars can be attached to the metal strikers, which make the glass breaking even simpler. The doors can be unlocked without sounding the alarm with keys issued to authorized personnel. *The Exit Lock Co., 141 Main St., Port Washington, N. Y.*



Holostud Partition can be used with either metal or gypsum lath to provide a hollow, non-load-bearing partition. The open-web design of the stud permits easy installation of utilities. Electrical conduits, pipes and ducts can be run through the stud horizontally as well as vertically, and web members can be cut for larger pipes or ducts. Holostud partitions are said to have excellent resistance to sound transmission and to be sufficiently strong to withstand destructive impact shocks. They provide a fire barrier with up to 2 hr fire protection. Studs are available in widths of 3¼, 4 and 6 in. and can be erected in heights up to 26 ft. *National Gypsum Co., Buffalo 2, N. Y.*

(Continued on page 266)

SPECIFY FIR PLYWOOD FOR SOFFITS, GABLE ENDS, PATIO FENCING and EXTERIOR TRIM. Choose standard panels for smooth, flat, unbroken effect . . . Texture One-Eleven® ("grooved") plywood for striking pattern and texture. Either kind simplifies cutting and fitting . . . creates handsome contrast with masonry or other materials. Plywood accents offer ideal solution for quick and easy exterior "face lifting" on remodeling jobs, too.

FREE PORTFOLIO OF EXTERIOR FIR PLYWOOD DESIGNS

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DFPA TESTED QUALITY EXT-DFPA®

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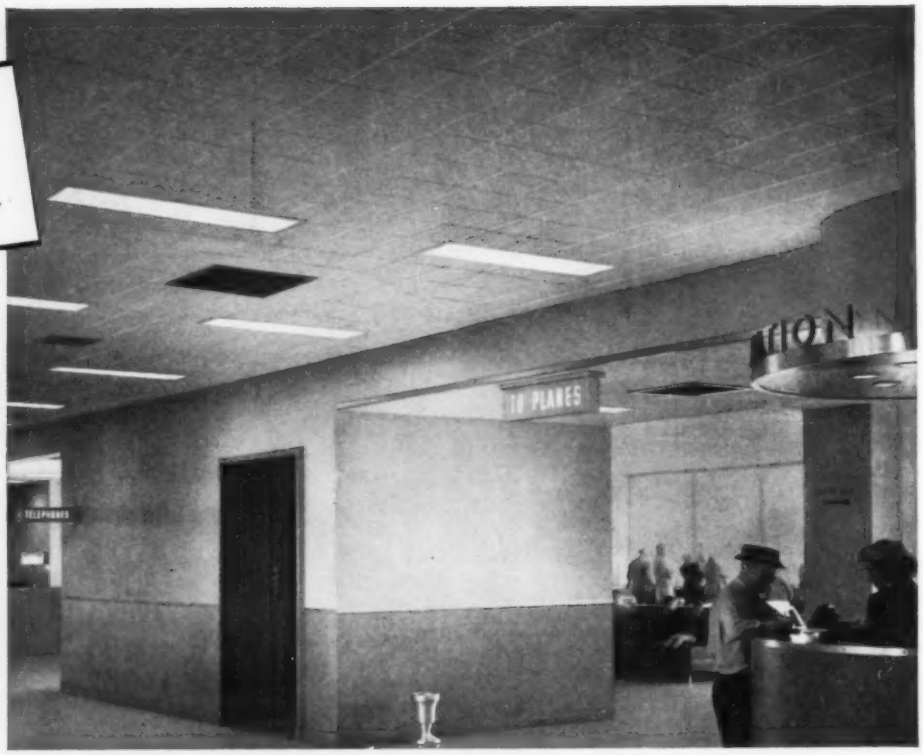
WSP

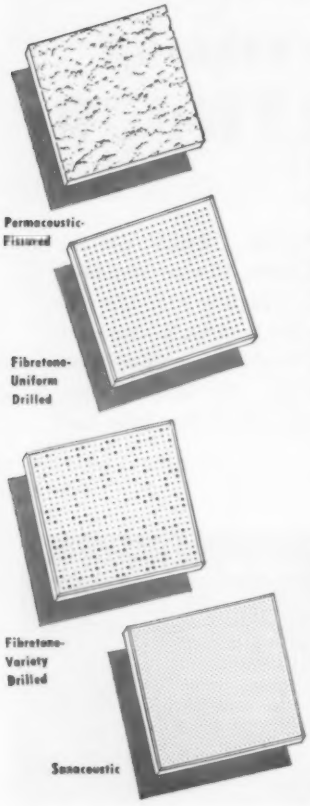
Exterior plywood of other western softwoods also available; look for this DFPA grademark.

Quiet is a modern necessity



Johns-Manville Fibretone ceilings in the Murphy Terminal Building, Bradley Field, effectively muffle the noise of heavy aircraft traffic outside . . . help provide a quiet, unhurried atmosphere

Changing the din of roaring horsepower to a Quiet purr...



Johns-Manville Acoustical Materials meet today's need for low-cost sound control

Business and industry depend on modern materials to achieve maximum acoustical efficiency. That's why practically all new building and modernization specifications include acoustical ceilings to reduce disturbing noise.

Johns-Manville offers a complete choice of highly efficient sound absorbing materials for every acoustical need.

- **J-M Permacoustic® Units**—combine maximum acoustical efficiency with architectural beauty. Has attractive fissured surface. Made of mineral wool, Permacoustic meets all building code fire-safety requirements.
- **J-M Fibretone® Units**—provide high acoustical efficiency at modest cost. Hundreds of small holes, drilled in a Uniform or Variety pattern, act as "noise traps." Fibretone has a white paint finish. Available with flame-resistant finish.
- **J-M Sanacoustic® Units**—perforated metal panels backed with a fireproof, highly sound-absorbent element. Noncombustible and sanitary. The white baked-enamel finish is easy to keep clean, and may be repainted.
- **J-M Transite® Acoustical Panels**—perforated asbestos-cement facings backed with a mineral wool sound absorbing element. Suitable in areas with high humidity (dishwashing rooms, kitchens, swimming pools, etc.).

• • •

For a complete survey by a J-M Acoustical Engineer, or for a free book entitled "Sound Control," write Johns-Manville, Box 158, Dept. AR, New York 16, N. Y. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

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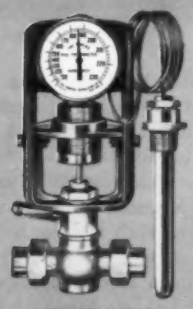
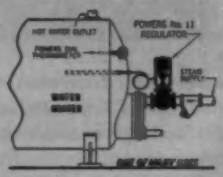
WHY POWERS No. 11 REGULATORS Give BETTER CONTROL and Last Longer



TEMPERATURE Indicating Regulator with Single Seat Valve

Simplest, Reliable **TEMPERATURE CONTROL** made for: Many Industrial Processes, Heat Exchangers, Air Compressors, Diesel Engines, Fuel and Crude Oil Heaters and Treaters.



SELF OPERATING Needs no Electricity.

Better TEMPERATURE Control results from powerful bellows and minimum of valve stem friction. Valve Stem Lubricator aids easy movement of valve stem without binding. Double ply metal used in Powers bellows outlasts ordinary single ply type.

Balanced (Double Seat) Valve

Controls Flow of Steam, Water or Gas

EASY TO INSTALL bronze union connections for single and double seat valves thru 2" save installation time and labor.

(c44)

Above: Flanged Iron Body Valve with Double Seat for sizes above 2"

● **15 to 20 Years of reliable service** is often reported by users of Powers Temperature Regulators. Since 1891 they have been noted for their sturdy construction and dependability.

● Right type of Regulator and the right size valve is important for best control. From Powers complete line of self operating regulators and air operated temperature controllers you can be sure of getting the type best suited for your requirements. Call our nearest office or write us direct. 3400 Oakton St., Skokie, Illinois. Offices in Chief Cities.

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From components to standard "custom-size" cabinets and complete systems, Allenco fire equipment is *designed* and *proved* to meet 3 main requirements—

UTILITY

Suits fire regulations, insurance standards, practical needs

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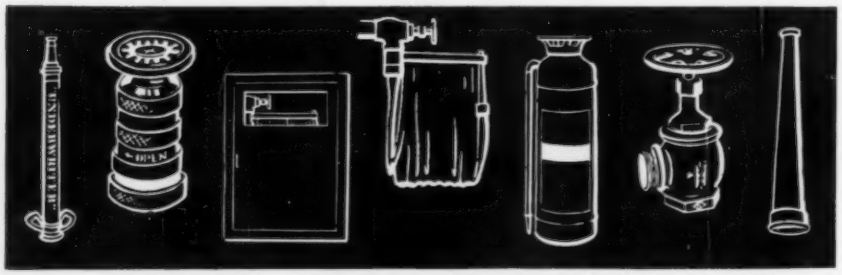
Looks well, permanently, in any setting . . . any structure

ECONOMY

Saves time in specifying* and installing, lasts longer



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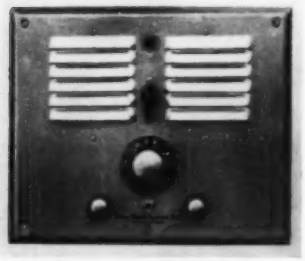
PRODUCT REPORTS

(Continued from page 263)

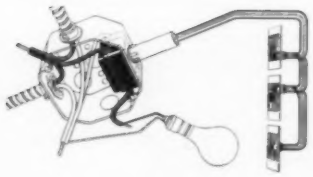
Plastic Wall Covering. *Velvetex* is a vinyl plastic fused to a fabric backing, making a product which, according to the manufacturer, is tougher and can endure more washing than any other wall covering. Velvetex is available in 16 designs, each in three to six colorways, and in nine tints and a linen texture design in 11 colors. *Velveray Corp., 15 West 34th St., New York 1, N. Y.*



Music-Radio-Intercom System for homes, *Musi-Kom DeLuxe*, includes radio and phonograph music in six rooms, intercom facilities from any room to all rooms, baby-sitting from any room to all rooms, door answering from three rooms and a fire alarm device that sounds a loud warning through every speaker in case fire breaks out. *Home Music Systems, Inc., 644 Madison Ave., Memphis, Tenn.*

Steel Folding Doors. *Slimfold* silent steel folding doors can be placed in any door frame, either the standard 6 ft 8 in. height or the 8 ft ceiling height. They open to the full width of the closet or storage area and are said to be fire-resistant and non-warping, -swelling or -shrinking. They are available in a natural flat tone finish or a baked enamel simulated birch wood grain finish. *American Steel Door Co., 11148 Harper Ave., Detroit 13, Mich.*

PRODUCT REPORTS



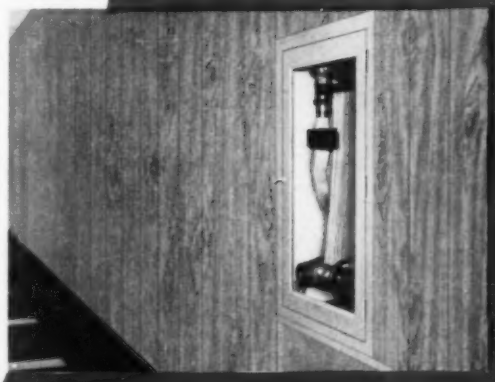
Remote Control Switching. *Remcon* is a low-voltage wiring device with its own miniature, built-in transformer, which provides flexibility of installation without having to wire back to a centrally located external transformer. As shown in the diagram above, which illustrates three remote switches for one lamp, the relay, with its own source of low-voltage power, fits into the outlet box which is fed by the cable circuit. Since only 6 volts are required to activate the outlet, No. 18, three-conductor, thermoplastic wire is run from the relay to each of the silent contact switches to be used. It is expected that the *Remcon* system will have application not only in residences, for remote switching of attic fans, door lights, hallways, electric appliances, etc., but also in schools, hospitals, offices and other building types. *Remcon, Pyramid Instrument Corp., Lynbrook, N. Y.*

Vent Pipe. *RV Metalbestos* offers a complete venting system, with an assortment of round fittings in all normally used sizes, specifically designed for safe, correct venting of gas appliances. The double-wall piping has a steel outer pipe which protects a thin inner pipe of aluminum. An insulating air space between keeps the inner pipe hot and the outer pipe cool. With a strong venting draft, fire hazards from overheating adjacent surfaces are eliminated and fast, complete carry-off of vent gases is assured. A *Rota-Lock Coupler* permits quick assembly. *William Wallace Co., Belmont, Calif.*

(Continued on page 268)

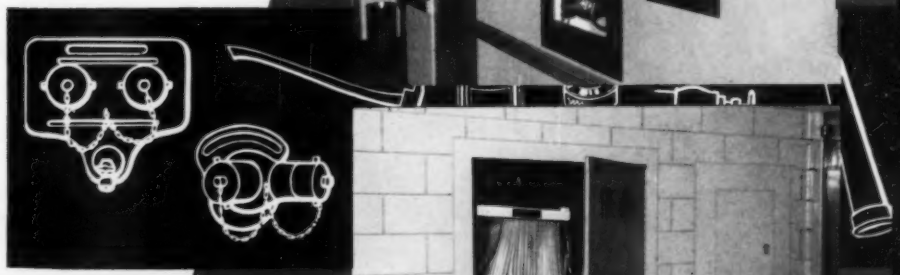
Another Allenco FIRST: The first practical cabinet to accommodate cotton rubber lined fire hose.

Allenco fire equipment need not be hidden. Cabinets can be placed for most *utility* without disturbing *eye*-tility.



Units shown are in office buildings, a hospital and a school.

Having a *complete* line, Allenco has what it takes for *any* job.



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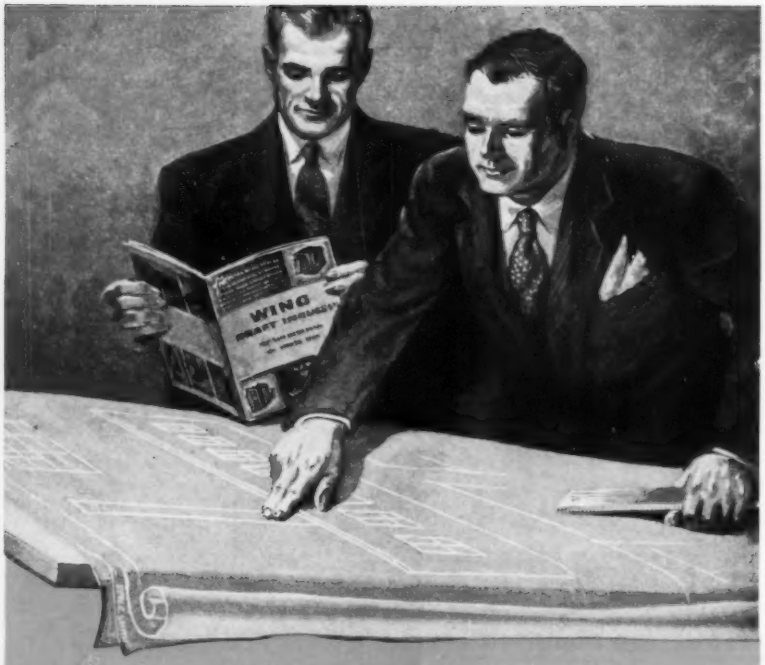
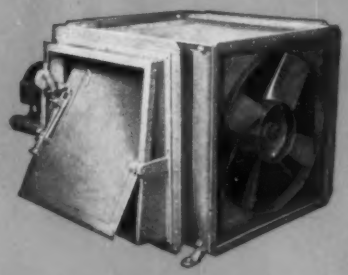


"...Let's cut this stack off here and put a Wing Draft Inducer on the boiler... We'll save the cost of the chimney, have better draft and a better looking building."

If you are building or rebuilding or increasing the size of your boiler plant, a costly, tall chimney can add considerably to the expense. And a well planned architectural design can be ruined with an unsightly, towering stack.



WING DRAFT INDUCERS eliminate this problem, providing positive, adequate, uniform draft regardless of surrounding conditions, or variable weather. They cut operating costs too, by giving higher CO_2's. Smoking is reduced or eliminated. Higher boiler capacity is possible. *Write for Bulletin I-55. Use the coupon.*

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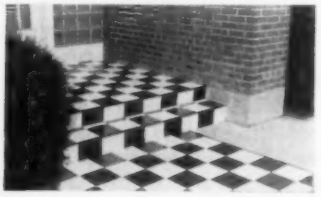
Wing

PRODUCT REPORTS

(Continued from page 267)

Architectural-Builder Consulting Service in resilient tile flooring applicable to the institutional, commercial and residential building fields, has been launched in nine metropolitan areas (Chicago, Cincinnati, San Francisco, Baltimore-Washington, Philadelphia, New York, Los Angeles, St. Louis and Cleveland), and will eventually cover every important metropolitan area. In addition to the consulting service, 75 new patterns in resilient flooring, including a new line of wall covering and a new development in *Dellox* rugs and carpets, have been introduced by *Armstrong Cork Co., Floor Div., Lancaster, Pa.*



Outdoor Tile. *Patio Tile* is a resilient tile which may be installed in outside areas such as patios and porches over concrete, wood, steel or almost any type of sub-floor. Produced in six colors in the Terra-Tile pattern, it is said to be unaffected by weather or prolonged exposure to sunlight, to be impervious to oils, greases, acids, salt and ordinary solvents and to have exceptional wearing qualities. *Robbins Floor Products, Inc., Tuscumbia, Ala.*

Insulated Panel Sandwich. *Hasko-Struct* is a structural sandwich panel in which facing sheets of Fiberglas cloth polyester are bonded to various densities of Styrofoam, plywood and other types of core materials. The structural strength and light weight of the panels, in addition to their low thermal conductivity and permanence of U factor, ensure low handling costs and long service life. The panels are said to be resistant to moisture, vermin, corrosion, rot, impact damage and deformation. *Hasko-Mold* strips, angles, channels and jambs match the panel sheets in surface appearance. *Haskelite Mfg. Corp., Dept. HS, Grand Rapids 2, Mich.*

(Continued on page 270)

ANOTHER PRESTRESSED CONCRETE PIER

for The Port of New York Authority

General view of pier deck nearing completion. Post-tensioned pile caps 21'-6" on centers are supported on steel H piles. Pier is 323 feet wide x 702 feet long.

Pulling 320-foot length of Roebling strand from barge-mounted reel into pile cap forms. Strand was delivered encased in flexible metal hose and with fittings attached ready for placement in forms.

Tensioning a strand while standing in railroad well. Use of single long-stroke center-hole ram and threaded connections cuts jacking time to minimum.

IT IS INTERESTING to recall that prestressed concrete was specified as an *alternate* to more conventional designs for Pier C. The results of that project were so satisfactory that prestressed concrete alone was specified for the new Pier A at Hoboken, N. J.

Roebling Tensioning Elements were used for pre-tensioning the deck stringers on both piers, and for post-tensioning the pile caps at Pier A. Several factors led to the choice of Roebling Strand Assemblies for the pile caps:

★ Machine fabricated strands permitted larger units and reduced the number of tensioning elements handled on the job;

★ For units exposed to tide action, Galvanized Strand Assemblies provided corrosion resistance while curing and minimized friction while tensioning.

★ 320-ft. assemblies complete with metal hose and fittings could be pulled into the forms (with stirrups in place) in 15 minutes;

★ Quick and easy tensioning with a standard center hole ram and threaded connections permitted supervision by regular personnel without need for specialists.

Precast stringers on the new pier, 5 ft. wide x 1 ft. deep and spanning between pile caps 21'–6" on centers, were pretensioned with over 400 miles of Roebling ⅜" 7-wire Uncoated Stress-Relieved Prestressed Concrete Strand.

Linear prestressing in America was initiated by Roebling. In fact, after two years of development and tests, Roebling assumed the role of "guinea pig" in 1946 and placed a prestressed concrete floor in its new Chicago warehouse.

Today, as the result of continuous development and participation in all types of prestressed projects, Roebling is the foremost supplier of tensioning materials in the industry. Why not ask the most dependable source for suggestions and advice on specific applications? Write Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, N. J.

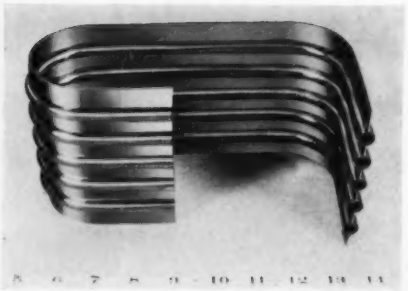
Pier A was designed by Parsons, Brinckerhoff, Hall and Macdonald for The Port of New York Authority. Erection including stringer fabrication, by J. Rich Steers, Incorporated.

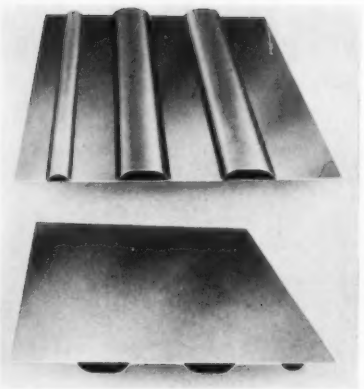
ROEBLING

Subsidiary of The Colorado Fuel and Iron Corporation CF&I

(Continued from page 268)

Tube-in-Strip is a single strip, or sheet, of solid copper, brass or aluminum in which tubes are inflated to desired running lengths in a variety of shapes and sizes. The product consists of only one piece of metal and not two pieces brazed, welded and rolled together. It has incorporated within it during casting expandable portions which can be inflated. Free inflation produces a wholly round tube, as shown in the photograph above. For dimensions and contours other than round, as shown in the photo at right above, the metal is inflated while held in restraint between flat plates. Stamping, forming, bending and drawing operations can be performed either before or after inflation. *Tube-in-Strip* will usually be furnished exactly as other sheet metal mill products — in long coils or in cut flat sheets in widths up to 16 in. at present and wider later — and inflated by the consumer either by air pressure or by hydraulic means. It is expected that the new product will have limitless applications in the heat exchange field, in water heaters and coolers, in radiant panel heating and electronics, among others. *Revere Copper and Brass, Inc., 230 Park Ave., New York 17, N. Y.*

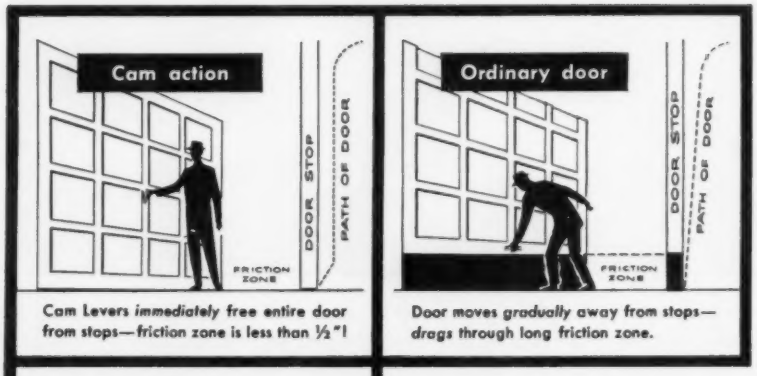




BARBER COLMAN

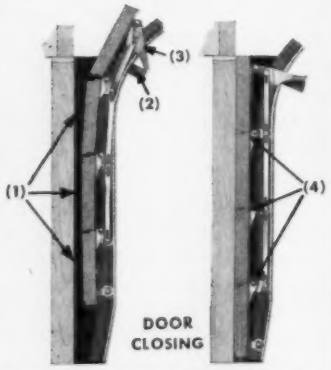
Barcol® OVERdoors

close tighter, yet open easier!



Cam Levers *immediately* free entire door from stops—friction zone is less than ½"!

Door moves *gradually* away from stops—*drags* through long friction zone.



SEE HOW CAM ACTION WORKS! (1) Uniform 3/8" clearance assures all-weather friction-free opening and closing. Stop (2) engages cam lever (3) linked to other cam levers (4) pushing all door sections simultaneously against stop strips.

CAM ACTION OVERdoors close tighter because door rolls easily down with 3/8" clearance and then is pushed forward by cam levers and held firmly and evenly against door stops. No dragging . . . no scraping.

CAM ACTION OVERdoors open easier, at a turn of the latch handle, because *extra* Cam Springs at bottom pull entire door 3/8" *back* from stops—overhead springs then lift friction-free door upward. Friction zone is reduced, allowing wood to swell in damp weather without sticking, binding, or wedging. Call your Barber-Colman distributor (under "Doors" in phone book) or write:

Barber-Colman Company

Dept. P63, Rockford, Illinois

Pushbutton Window. An electrically operated window which opens and closes with quiet, positive movements, is controlled by a button which can be located on the sill, near the window or from some distant spot at a central switch. Any number of units can be wired to the same circuit for simultaneous remote control of all windows in a building. When the sash is completely open, the motor stops and will start again only if directed to close the window, and vice versa. In case of power failure, an automatic clutch disengages, putting the window on manual control until power is restored. *Gate City Sash & Door Co., 15 S.W. Third Ave., P.O. Box 901, Ft. Lauderdale, Fla.*

(Continued on page 272)

THE MARK OF QUALITY

BARBER COLMAN

UNI-FLO

ENGINEERED AIR DISTRIBUTION

ELECTRIC-ELECTRONIC

Automatic Controls

Developed at Wildwood Elementary School, West Allis, Wisconsin . . .

Important new answer to individual room comfort in modern daylight schools!

Learn the complete story! Find out how Barber-Colman engineers with background in both air distribution and temperature control combined skills with the consulting engineer and architect.* The resulting new indoor comfort system is applicable to buildings all over the country having extensive window areas . . . it may be exactly the answer you've been searching for. Phone your nearby Barber-Colman Office or write today!

* HOLLAND & BESEKE, *Consulting Engineers;* LINDL-SCHUTTE & ASSOCIATES, *Architects and Engineers,* West Allis, Wisconsin.

Come to ONE source . . . come to . . .

Barber-Colman Company

DEPT. C, 1604 ROCK ST., ROCKFORD, ILLINOIS, U. S. A.

manufacturer
architect
builder
buyer

all win with quality extrusions

For the name of the manufacturer of this railing, write our Sales Department.

Four Harvey Extrusions . . . top rail, bottom rail, posts, and spindles . . . make up this modern railing. Needing only cutting to length and drilling, the extrusions are practically finished parts as received from the mill.

To the architect and builder, the railing spells genuine quality, an item safe to recommend to their clients. To its manufacturer, the railing represents a combination of high sales volume and lower manufacturing cost. All-in-all, another example of how Harvey Quality Extrusions add up to an ideal material for your architectural products.

MAKING THE MOST OF ALUMINUM . . . FOR EVERYONE

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC.
TORRANCE, CALIFORNIA
BRANCH OFFICES IN PRINCIPAL CITIES

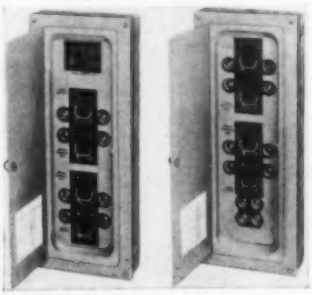
Send today for our latest brochure, "Aluminum Extrusions."

Harvey is a leading independent producer of aluminum extrusions in all alloys and all sizes, special extrusions, press forgings, hollow sections, structurals, rod and bar, forging stock, pipe, tube, impact extrusions, aluminum screw machine products and related products. Also similar products in alloy steel and titanium on application.

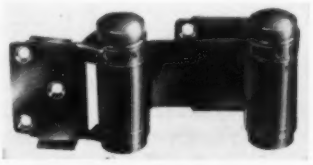
PRODUCT REPORTS

(Continued from page 270)

Sliding Glass Doors are available in multiples of 3 ft (6, 9, 12, etc.) and 4 ft (8, 12, 16, etc.) with an over-all height of 6 ft 10 in. *Glamour KD* sliding glass wall door units have aluminum framing and are produced for both single and double glazing. They are said to be protected against moisture, abrasion and staining. *Glamour Glass Wall-Dor Corp., 4723 No. Pulaski Rd., Chicago 30, Ill.*



Fusible Service Entrance Panels. G-E has introduced two new panels: one (shown at left above) has five fuse pullers and eight plug fuse branch circuits, and the other (shown at right) has four fuse pullers and either eight or twelve plug fuse branch circuits. Both are rated for 120/240-volt a-c, single-phase, three-wire service and have 100-amp main lugs. They are designed to provide adequate circuits and wiring protection for modern homes. *General Electric Co., Trumbull Components Dept., Plainville, Conn.*



Spring Hinge for louver doors will operate a door up to 18 lb in weight from ¾ to 1⅛ in. and from 1⅛ to 1⅝ in. in thickness. The 2¾-in.-high hinge is attached right to the jamb, with no hanging strip required. *Bommer Spring Hinge Co. Inc., Landrum, S. C.*

(Continued on page 274)

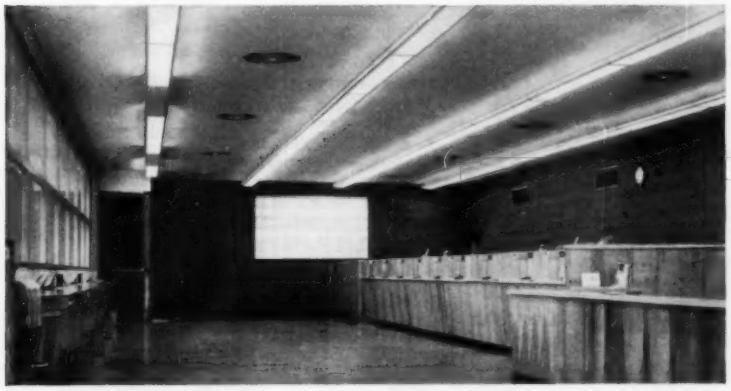
See how All-Air High Velocity units

lower the roof

The National Bank of Detroit, which is equipped with an Anemostat All-Air High Velocity distribution system.

This photograph shows the high velocity ducts installed *through* the open web joists. Note how the Anemostat sound attenuation unit is also placed *inside* the open web joist area. As a result, the architects and engineers were able to save *nearly two feet in a one-story building* . . . also make comparable savings in construction costs.

Completed interior with the Anemostat High Velocity units installed in the ceiling.



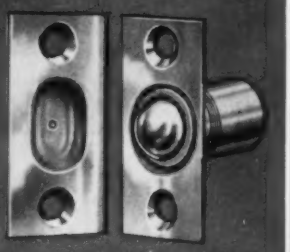
Facts about All-Air HV units

- Can be used with smaller than conventional ducts.
- Can be installed through open web joists (as shown here) and in many other space-saving applications.
- Can be installed faster and with less cost.
- Require no coils, thus eliminate clogging and odors.
- Round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.

- *Architect:* W. ROY AKITT
- *Engineer:* F. A. SANDO
- *Mechanical Contractor:* JOHN M. CAMPBELL, INC.
- *Ventilating Contractor:* AUTOTHERM CORP.

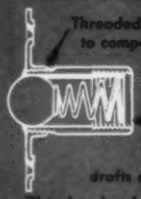
• ***For latest data on All-Air High Velocity units,*** write on your business letterhead for *new Selection Manual 50* to Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.

Adams-Rite



Ball Latches

They are superior to "plunger" or "bullet" type latches because the rolling steel ball can't jam.


Threaded barrel adjustment to compensate for binding or shrinkage of door.
Spring pressure adjustment to compensate for drafts or weight of door.

This latch always fits every installation when installed as follows:

Strike on door (not on jamb)
Latch on jamb (not on door)

Ideal for louvered doors, wardrobes, accordion doors, cabinets and service doors, to list a few.

Two Sizes. #234—2⅛"x1", also #434—1½"x⅞". All popular finishes.

a r

For Complete Information Write to

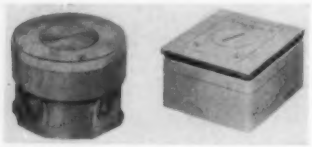
ADAMS-RITE MANUFACTURING CO.

540 West Chevy Chase Drive
Glendale 4, Calif.

PRODUCT REPORTS

(Continued from page 272)

Plastic Wall Tile. Commercial Standard CS 168-50, provided by the U. S. Dept. of Commerce in cooperation with the National Bureau of Standards, states the minimum requirements for plastic wall tile and adhesive. Through the efforts of the Society of the Plastics Industry, these standards have been set forth to make plastic wall tile eligible under the materials specification requirements of the FHA. In addition, a guarantee program, to assure high-quality products and workmanship by providing a mark of identification, has been initiated by *Dow Chemical Co., Midland, Mich.*



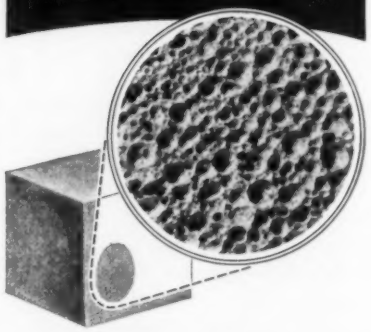
Electrical Floor Boxes in new shallow dimensions to meet the below-floor wiring of modern shallow-floor construction feature recessed cover flanges and interchangeable round or rectangular covers. The minimum heights for the boxes are 2⅞ in. for the rectangular box and 3 in. for the round. *Russell & Stoll Co., Inc., 125 Barclay St., New York 7, N. Y.*

Multiple Aluminum Insulation. A new, tough laminated foil, consisting of strong kraft fiber sandwiched between two sheets of aluminum, was tested, as shown above, by lifting six men and a heavy platform, a total of 941 lb, on a single sheet. Actually, it was estimated that the sheet could support twice that weight. The new insulation products, called Infra Types 6PShll and 4PShll, have the same 97 per cent reflectivity of previous Infra accordion insulation types. *Infra Insulation Inc., 525 Broadway, New York 12, N. Y.*

(Continued on page 276)

Introducing Elastizell

. . . a basis for making LIGHT WEIGHT, STRONG, INSULATING concretes from universally available materials



what can YOU do with this product of many uses?

ELASTIZELL-TYPE CONCRETE "PLUSSES" . . .

- LIGHT WEIGHT . . . big savings in handling and design
- STRONG . . . strengths for structural applications
- MOISTURE-RESISTANT . . . cork tile on grade
- SELF-INSULATING . . . comfort on grade
- POSITIVE DENSITY CONTROL . . . results as predetermined
- HOMOGENEOUS STRUCTURE . . . uniform strength and insulation

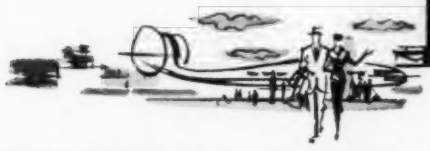
Write, wire or 'phone . . .

ELASTIZELL CORPORATION OF AMERICA
158 FLETCHER STREET • ALPENA, MICHIGAN
'PHONE 1080

Marvibond

...the unique process *that combines the strength of metal with the wear-resistant beauty of vinyl film made from Marvinol® resins* for...

ULTRALITE SAMSONITE Luggage*



OF COURSE, YOU don't make luggage, but there is an idea in this suitcase you can probably use! It's the functionally-practical beauty of its *vinyl finish inseparably bonded to the sheet magnesium from which the suitcase was formed.*

The MARVIBOND Process—developed and licensed by Naugatuck—makes possible the bonding of sheets of specially-compounded vinyl plastic to sheets of steel, aluminum, magnesium or other metals. This plastic finish is easily wiped clean, resists wear, exposure, chemicals and oils. After laminating, the flat sheets can be formed, crimped, punched, drilled and sheared very much like ordinary sheet metal.

Just think of all the product applications for sheet metal with a color textured plastic finish... or for plastic reinforced by metal! The possibilities are limitless.

Typical uses for MARVIBONDED materials are wainscoting in hospitals, hotels, schools, offices, playrooms, bathrooms and kitchens; also for cabinets, shower stalls, shelving, office partitions, desk tops, machine housings, radio and television cabinets, house trailers and interiors for buses, automobiles, railroad coaches, airplanes and ships.

Does the idea ring a bell? Then contact us for the names of MARVIBOND† Process licensees who can supply you with Marvibonded laminates for your requirements.

*Made by Shwayder Brothers, Inc., Denver
†U. S. Patent Pending

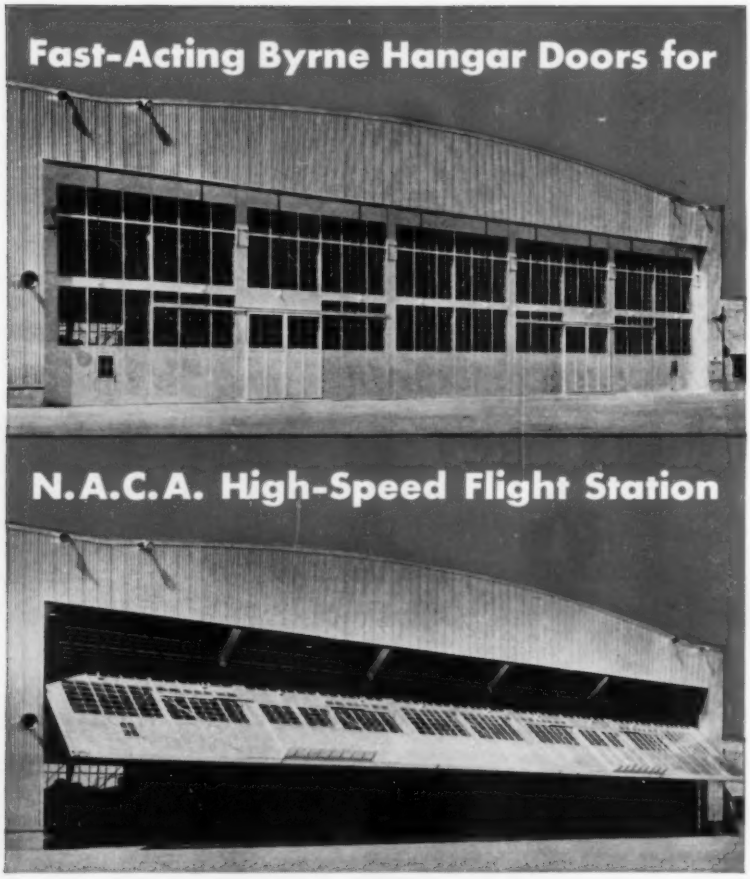
Naugatuck Chemical

Division of United States Rubber Company
Naugatuck, Connecticut

US RUBBER

BRANCHES: Akron • Boston • Gastonia, N. C. • Chicago • Los Angeles • Memphis • New York • Phila.
IN CANADA: Naugatuck Chemicals, Elmira, Ontario • Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.

Fast-Acting Byrne Hangar Doors for N.A.C.A. High-Speed Flight Station



Architect: Giffels & Vallet, Inc., Detroit, Michigan
Contractor: P. J. Walker Company, Los Angeles, Calif.

Byrne Type K Canopy Type Hangar Doors were a natural choice for the High-Speed Flight Station maintained by the National Advisory Committee for Aeronautics at Edwards Air Force Base, California.

The installation shown, one of three Type K Doors each measuring 150′ by 32′, provides all of the recognized features of Byrne Hangar Doors, including fast operation . . . extremely tight closure . . . minimum maintenance . . . maximum utilization of floor space . . . along with complete safety under all operating and weather conditions.

The Byrne Type K Door can be furnished for heights up to 55′ with single sections up to 150′ wide, as illustrated, or in sections which can be operated individually or simultaneously. They are motor-operated, individual acting, with balanced suspension through cables which transmit dead loads to counterweights.

More than 25 years' experience is at your service in the development of any kind of door for industrial needs, particularly the design and construction of hangar doors. *For complete information, check Sweet's Catalog, or write direct to Byrne Doors, Incorporated.*

BYRNE doors, inc.

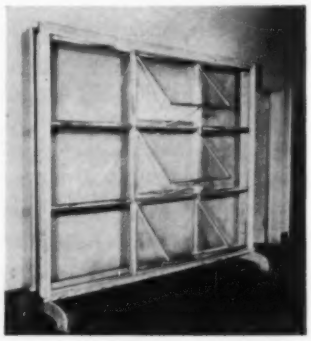
1603 E. 9 Mile Road, Ferndale, Detroit 20, Mich.
101 Park Ave., New York 17, N.Y.
Dept. r-14 *Cafritz Bldg., Washington 6, D.C.*
Byrne Doors, Ltd., 61 Avenue Road, Toronto, Ont.

PRODUCT REPORTS

(Continued from page 274)

Stainless Steel Extinguisher. A lightweight, stainless steel, pressurized water fire extinguisher, said to be the first ever developed, is approximately 4 lb lighter than a 2½-gal brass extinguisher. It is recommended for schools, hospitals, institutions and any other installations where women or children might have to use it. A slight pressure of the thumb releases a 35- to 45-ft stream of water which, unlike non-pressurized models, can be shut off. *Fyr-Fyter Co., 221 Crane St., Dayton 1, Ohio.*

Drafting Desk. The *Modulator* line consists of 14 basic models of steel desk units with plastic and linoleum work surfaces and lightweight aluminum drafting boards. The drawing board, ranging in size from 26 by 40 in. to 43½ by 72 in., is mounted on nylon runners and is counterbalanced for vertical height adjustment up to 12 in., permitting the draftsman to sit or stand. The board may also be adjusted to any angle from 10° off vertical to 10° from horizontal and can be locked at the selected angle. *Emeco Corp., Hanover, Pa.*



Aluminum Windows for use in walls of windows, ribbons of windows, single openings or conventional size openings are made in one basic size and four variations. The versatile *Flex-a-lite* window has vented or fixed units and is completely weatherstripped. *Altex Engineering Co., Summerville, S. C.*

(Continued on page 280)

Design for Student Commons by Sherwood, Mills and Smith

"CERAMIC TILE COMBINES COLORFUL SURFACING WITH LOW MAINTENANCE COSTS."

SHERWOOD, MILLS AND SMITH

Per T.S.

Sherwood, Mills and Smith have created a design for a high school Student Commons room. Ceramic tile is the key surfacing material—one which gave the architects both durability and design flexibility.

The handsome, heavy-duty ceramic tile floor units will take generations of student traffic with little wear and no waxing. The glazed tile walls will never see a paintbrush—yet they'll remain sparkling, fireproof, scratchproof and stainproof for the life of the school.

The colorful tiled fireplace wall provides a friendly focal point for student discussions—a lasting tribute to tile's ability to give architect and builder unique custom effects with standard tiles.

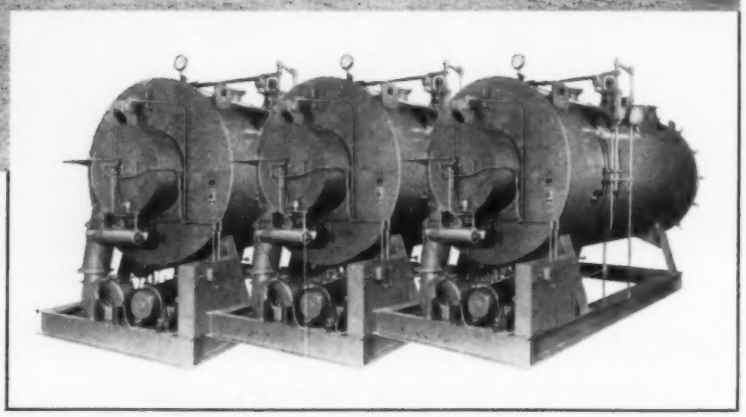
A ceramic tile specification is in tune with today's school and institutional needs. You actually specify "built-in" maintenance savings: easy cleaning, no waxing and no replacement for the life of the installation. See your tile contractor. Ask him for the latest information on ceramic tile colors, textures and sizes. It will pay off on your next project for both you and your client.

The Modern Style is CERAMIC tile

TILE COUNCIL OF AMERICA, Room 3401, 10 East 40th St., N.Y. 16, N.Y. or Room 933, 727 W. 7th St., Los Angeles, Calif.

PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co. Cambridge Tile Mfg. Co. • Carlyle Tile Co. • Dover Ceramic Co. • General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co. Mosaic Tile Co. • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pomona Tile Mfg. Co. • Ridgeway Tile Co. Robertson Mfg. Co. • Royal Tile Manufacturing Co. • Sparta Ceramic Co. • Stylon Corp. • Stylon Southern Corp. • Summitville Tiles, Inc. United States Ceramic Tile Co. • Winburn Tile Mfg. Co.

This Multi-million dollar Shopping Center is a *Nickel Spender* for heat and power



Recently completed O'Neil-Sheffield Shopping Center in Sheffield Township, Ohio.

Architects: Weinberg and Teare, Cleveland, Ohio.

Consulting Engineers: Superior Engineering Company, Cleveland, Ohio.

Heating Contractor: T. O. Murphy, Oberlin, Ohio.

York-Shipley Distributor: Allied Oil Company, Cleveland, Ohio.

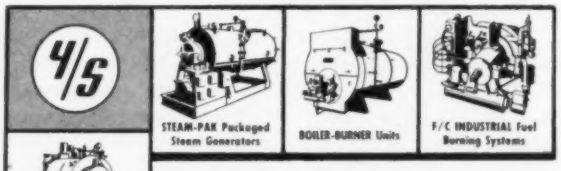
. . . thanks to three York-Power Steam-Pak Generators that operate only as the load demands

The larger the project, the more accurately you've got to figure operating costs—so argued the Architects and Engineers responsible for the mammoth O'Neil-Sheffield shopping center illustrated above.

With inefficient equipment, these men realized their heating costs might easily get out of hand. For this reason, they specified and installed thrifty, efficient York-Power Steam-Paks.

The 39 stores in this modern shopping center are hooked into a heating circuit powered by 3 York-Power SPW400–6 Steam-Paks. They are equipped with full modulation and each cuts in automatically *only as the load demands.* Under ordinary conditions, only one generator is required for the entire operation.

Find out how York-Power units can mean maximum economy and efficiency for your installation. You can depend on your nearest York-Shipley Representative for full cooperation. Call him today.



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Industrial Division

YORK-SHIPLEY, INC.

YORK, PENNSYLVANIA

Looking for Architectural Consultant Service on Floor Treatments?

HILLYARD CHEMICAL CO.
Architectural Dept.
St. Joseph, Mo.

ARCHITECTURAL FILE

Please have the Hillyard "Maintaineer*" give me a complete set of A.I.A. numbered files on the proper Hillyard treatments, recommended for every type floor.

Name.....Title.....

Firm Name.....

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City.....State.....

* A trained floor treatment Architectural consultant

SEND FOR FREE HELPS TODAY!

A Specialized Hillyard SERVICE FOR ARCHITECTS

includes assistance in three important phases of your total responsibility. Careful consideration of these three steps in Hillyard service can assure floor beauty and utility that will commend complete client satisfaction.

1

RECOMMENDATION OF SPECIALIZED PRODUCTS. Every Hillyard product is made because of a particular need. Whether it's treating a new concrete floor to permit proper curing or sealing asphalt tile to develop a more beautiful slip-resistant finish, the Hillyard "Maintaineer" has the answer to any floor problem.

2

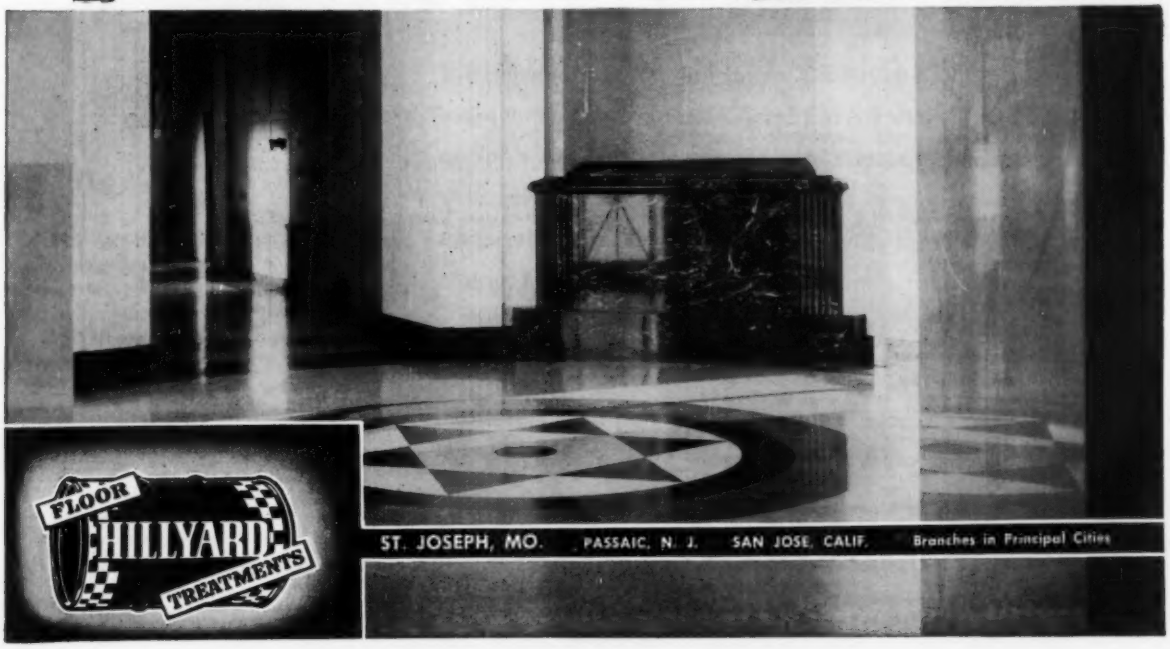
PROPER APPLICATION METHODS are thoroughly explained and illustrated in material that is made available to your contractors.

3

"JOB CAPTAIN" SUPERVISION is provided FREE on any job you specify. To be sure these application methods are fully understood and used according to specifications, a staff of trained experts located throughout all 48 states is available to you at all times.

FREE RECOMMENDATION SURVEY of any job on your boards now. There's a Hillyard floor treatment expert near you. Just send the coupon above or write to Hillyard, St. Joseph, Mo.

AL JOLSON MEMORIAL Architect: Paul R. Williams, Los Angeles

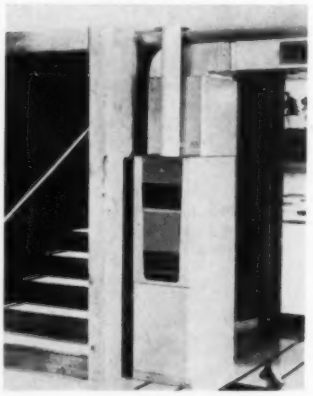


FLOOR HILLYARD TREATMENTS

ST. JOSEPH, MO. PASSAIC, N. J. SAN JOSE, CALIF. Branches in Principal Cities

(Continued from page 276)

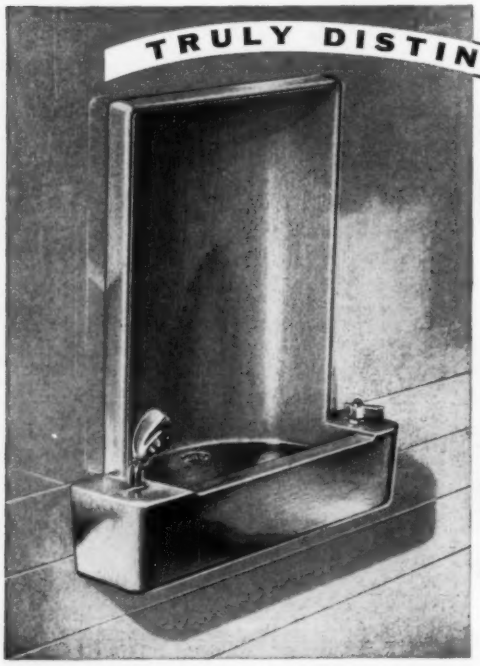
Perimeter Insulation developed for home construction to insulate surface-poured concrete slabs rapidly and economically consists of a spun mineral fiber called *Perimsul*. The lightweight, semi-rigid material exhibits a high thermal efficiency and serves also as an expansion joint between slab and foundation. Its high compressive strength withstands the pressures developed by slab and soil. It reportedly does not attract vermin or rodents, is impervious to soil acids and moisture, will not support combustion and has negligible capillary action. Readily cut and shaped, it is available in 48-in. lengths, with widths of 12, 18 and 24 in. and thicknesses of ¾, 1, ½ and 2 in. *Baldwin-Hill Co., Building Materials Div., 500 Breunig Ave., Trenton 2, N. J.*



Adaptable Furnaces. A new line of *Winter Weathermaker* furnaces has been introduced which permit economical adaptation to year-round air conditioning. Vertical models of the new design, shown above, are available with a matching plenum on top which serves as a section of duct. In adapting to air conditioning, a front cover on the plenum is removed and a cooling and dehumidifying coil slipped in and connected to an air-cooled condensing unit outside. *Carrier Corp., Syracuse 1, N. Y.*

Axial Fans. Series 203 axial fans for straight-line air flow in industrial ventilation, process air supply and process air recirculation have cylindrical casings, allowing installation in ducts requiring a minimum of space, and can be mounted in a number of ways for either vertical or horizontal air flow. Integral support legs can be provided for wall, ceiling or floor mounting. They are available as direct-drive tubeaxial, direct-drive vaneaxial, V-belt drive vaneaxial (shown above) and V-belt drive spraybooth type. *American Blower Corp., Detroit 32, Mich.*

(Continued on page 284)



HAWS

SEMI-RECESSED
WALL FOUNTAIN

MODEL No. 73

Smartly designed, extraordinarily convenient is this *entirely new* HAWS Semi-recessed Fountain that takes up little space in corridor or room and has drinking fountain head and operating lever handle accessibly located opposite one another on the top platform. An access panel in wall is NOT required for this fountain and all fittings are accessible from under bowl.

Write today for full details of this handsome fixture that will lend grace to your most exactingly designed public building, office building, school, hospital or restaurant.

HAWS DRINKING FAUCET CO.

1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

. . . because someone did NOT specify

CAST IRON SOIL PIPE

You know what happens when the plumbing fails in a public place. It has to shut down until the sanitary facilities are in apple-pie order. It means no income for the owner until these facilities get back to work.

You can prevent such failures of the plumbing drainage system—even before the building is in the blue-print stage. Simply *write in* the specification that *keeps out* failure. Specify **Cast Iron Soil Pipe** for waste lines, vent stacks and sewer lines.

By specifying cast iron, you give the businessman—or homeowner—a plumbing drainage system that will last as long as the building. For **Cast Iron Soil Pipe** is the rugged, time-tested drainage material that *can't* be crushed by shifting soil or settling foundations . . . *can't* be deteriorated by household chemicals. Equally important, cast iron's joints are as permanent as the pipe itself—they're packed tight with oakum and lifetime-sealed with molten lead.

So give your clients the permanent protection they deserve. Specify **Cast Iron Soil Pipe.** It's the *only* pipe accepted in *all* codes for use from street to roof.

Remember—CAST IRON IS FOR KEEPS.

PERMANENT
CAST IRON SOIL PIPE
has *all* these advantages

- **Rugged metallic strength**
- **Zero moisture absorption**
- **Permanent tightness of joints, with flexibility**
- **The only pipe accepted in all codes for use from street to roof**

CAST IRON SOIL PIPE INSTITUTE
Dept. AR-3, 1627 K Street, N. W., Washington 6, D. C.

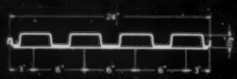
Send me _____ copies of your new 12-page booklet "Best in the Long Run" that shows, with actual photographs and authenticated captions, what can happen to lines that aren't Cast Iron.

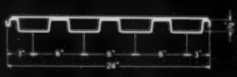
Name_____

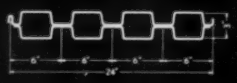
Address_____

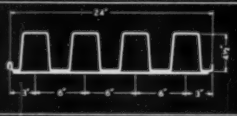
City_____ Zone___ State___

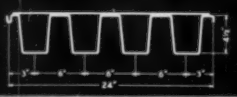
Milcor Celluflor types provide greater design flexibility

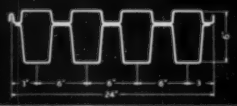


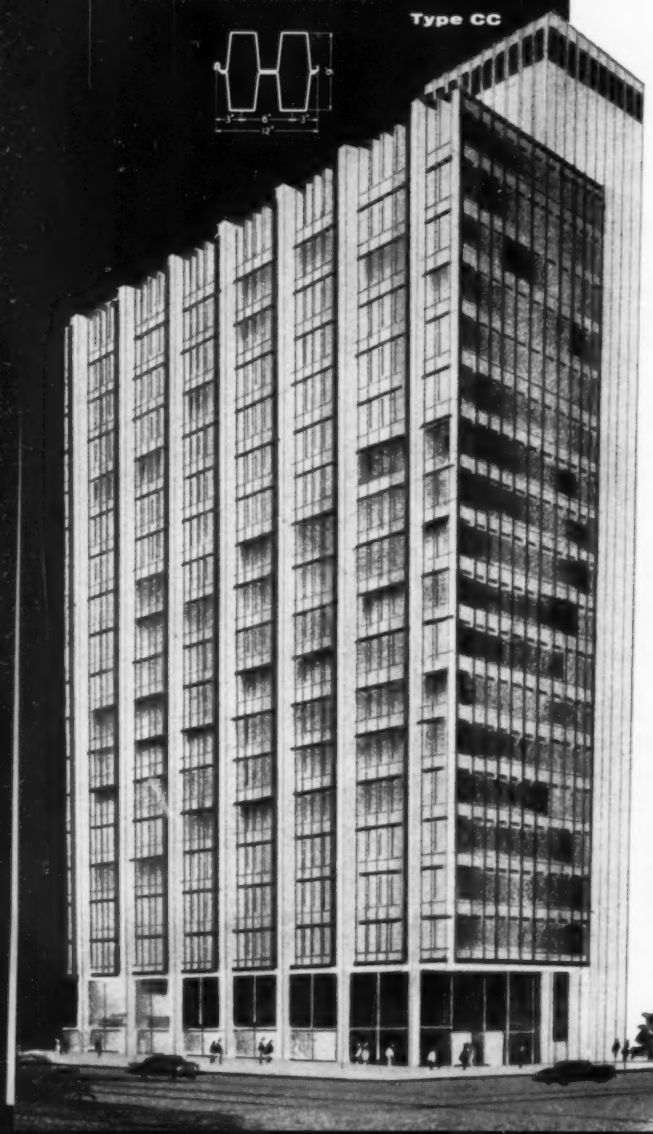


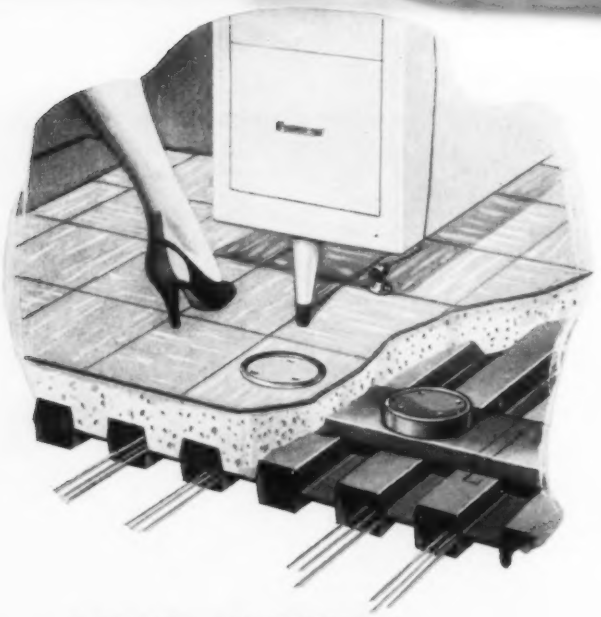












Leading Architects Report...

1 *Substantial saving in construction time.* Installation of Celluflor proceeds right along with the structural steel frame — in any weather. There's no waiting for form construction, curing time, or shoring removal. Speedy erection immediately provides storage and work areas for other trades.

2 *Saving of structural steel up to 15%.* With Milcor Celluflor, supporting beams and columns can be smaller than in heavy, wet mass construction. Celluflor's sturdy, multi-cell design transfers stresses of concentrated loads to adjacent cells.

3 *Elimination of construction hazards.* Milcor Celluflor eliminates need for wood forms and shoring, materially reducing danger from fire. There can be no structural failure due to excessively wet or freezing weather conditions.

4 *Addition of extra floors within the load limits of existing foundations.* Milcor Celluflor construction offers lightweight advantages in combination with great strength.

5 *Elimination of interior columns.* This lightweight floor permits use of columns only at the perimeter of buildings, thus providing complete flexibility for the placing of interior partitions.

6 *Provision for tomorrow's electrical circuit requirements today.* Milcor Celluflor's ample raceway capacity accommodates all of today's wiring and permits easy addition of new services in the future — office automation circuits, closed-circuit TV and many others.

7 *Installation costs equal to bar-joist-and-concrete construction.* Through combination of Milcor Celluflor types construction costs can be materially reduced.

8 *Savings where foundation conditions are poor.* Milcor Celluflor does not require the expensive foundations sometimes needed for other types of construction.

Inland Steel Company Building
Chicago, Ill. Architects-Engineers: Skidmore, Owings & Merrill, Chicago, Ill. General Contractor: Turner Construction Co., Chicago, Ill.

INLAND STEEL PRODUCTS COMPANY

4033 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

OFFICES IN: BALTIMORE • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND DALLAS • DETROIT • KANSAS CITY • LOS ANGELES • MILWAUKEE MINNEAPOLIS • NEW YORK AND ST. LOUIS.

Milcor Celluflor meets any combination of circuit and design requirements

Milcor's "floor of the future" permits unlimited electrification in a variety of fields

This steel sub-floor meets today's growing need for flexibility in electrification for both communications and power. Combining strength with light weight, it helps the architect solve unusual load problems economically.

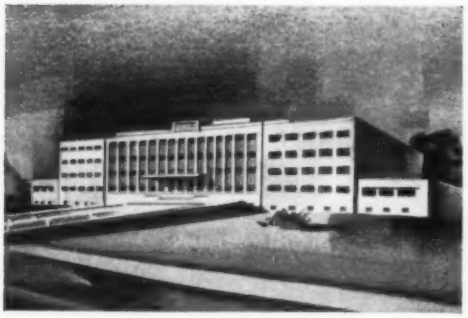
No matter how complex the electrical system, Milcor Celluflor has ample capacity to handle it. Its cells, spaced on 6-inch centers, permit the installation of service outlets at any point on the floor. As requirements change, these outlets can be relocated — or new ones added — without expensive alterations.

The raceways of Milcor Celluflor can be used also for other services — for data-processing and office automation circuits . . . for closed-circuit television hook-ups . . . for future telephone-cable demands.

The variety of Milcor Celluflor types enables you to take full advantage of every opportunity to apply this modern idea in floor construction.

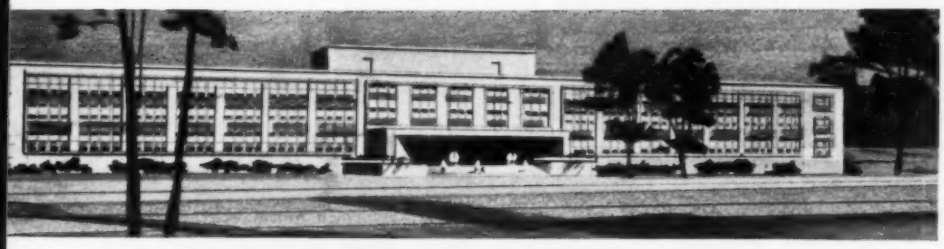
Catalog No. 270, available upon request, further develops the exceptional possibilities of Milcor Celluflor.

MILCOR® Celluflor

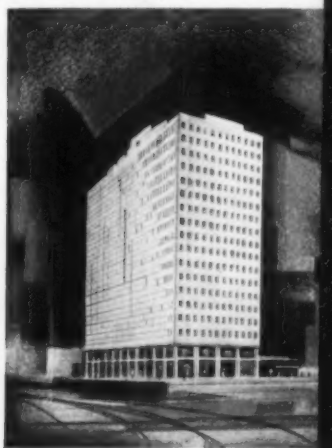


. . . in the **Insurance** field
State Mutual Life Assurance Building, Worcester, Mass. Architects-Engineers: Cram & Ferguson, Boston, Mass. General Contractor: Turner Construction Co., N. Y. C.

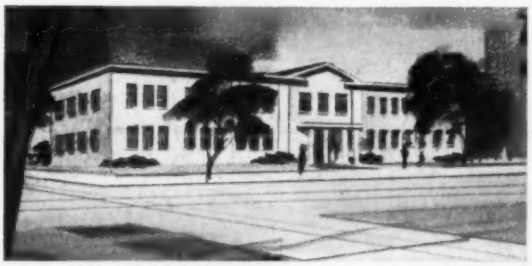
. . . in the **Banking** field
Federal Reserve Bank Building, Minneapolis, Minn. Architects: Larson & McLaren, Minneapolis, Minn. General Contractor: Naugle-Leck, Inc., Minneapolis, Minn. Consulting Engineer: Schuett-Meier Co., Minneapolis, Minn.



. . . in the **Govermental** field
New York Department of Civil Service Building, Albany, N. Y. Architects: Cornelius J. White, State Architect, Albany, N. Y. Kenneth G. Reynolds & Associates, Albany, N. Y. General Contractor: Brown-Turner, N. Y. C. Engineers: Praeger & Kavanaugh, N. Y. C.



. . . in the **Transportation** field
Pennsylvania Transportation Center, Philadelphia, Pa. Architect: Vincent Kling, Philadelphia, Pa. General Contractor: McCloskey & Co., Philadelphia, Pa. Engineer: McCormick & Taylor Associates, Philadelphia, Pa.



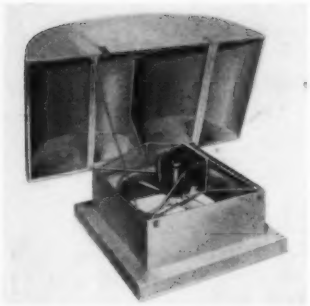
. . . in the **Communications** field
Glen Ridge Directory Building, (New Jersey Bell Telephone Co.) Glen Ridge, N. J. Architects: Voohees, Walker, Smith & Smith, N. Y. C. General Contractor: James Mitchell, Inc., Jersey City, N. J.

. . . in the **Finance** field
Commercial Credit Building, Baltimore, Md. Architects: Harrison & Abramovitz, New York City. General Contractor: Consolidated Engineering Co., Baltimore, Md. Engineer: Edwards & Hjorth, N. Y. C.

PRODUCT REPORTS

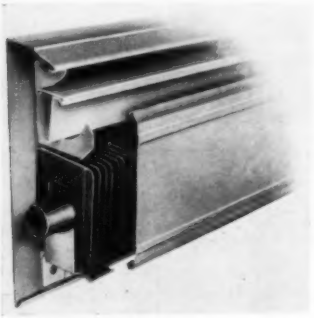
(Continued from page 280)

Reversible Roof Ventilator moves air in either direction with almost equal efficiency. Under normal exhaust conditions the unit operates like any other roof ventilator, but at the flick of a switch it can be converted into an intake unit. The ventilator is made in 28-, 36- and 44-in. sizes with a capacity range from 5500 to 23,600 cfm for exhaust and 5340 to 22,300 cfm for intake. It can be supplied in all sizes for flat roof, slope roof or peak installation. *Hartzell Propeller Fan Co., Piqua, Ohio.*



Ceramic-on-Steel Wall Tile is guaranteed by the manufacturer against crazing, cracking or color fading for the life of the building in which it is installed. *Starfire* tile is said to be washable and resistant to all stains and can be installed directly on dry-wall construction. Available in a variety of decorator colors. *The Bettinger Corp., Waltham, Mass.*

Folding Closet Door consists of four panels, hinged in pairs, which, when open, permit full access to the closet. The *Amweld* steel units are available in 3-, 4- and 5-ft widths in standard height, 6 ft 8 in., and king-size height, 8 ft. Projection distance into the room for the three widths, when the doors are open, are 5, 7 and 9 in. The doors are finished in a flat prime gray over which paint or paper can be applied. *The American Welding & Mfg. Co., Building Products Div., Warren, Ohio.*



Baseboard Radiation. A new line of *Aire* baseboard radiation for forced hot water heating systems provides a warm curtain of convector heated air from the top of the unit as well as radiated heat. The units are designed for either flush or recessed installation, with enclosures 9½ in. high and extending 2¼ to 3 in. into the room. The front cover plate can be snapped off for access to parts for cleaning. *Standard Fin Pipe Radiator Corp., Clinton, Mass.*

(Continued on page 288)

NON-SLIP
WET OR DRY

ALUNDUM Aggregate in Terrazzo . . . Spells Safety and Long Wear

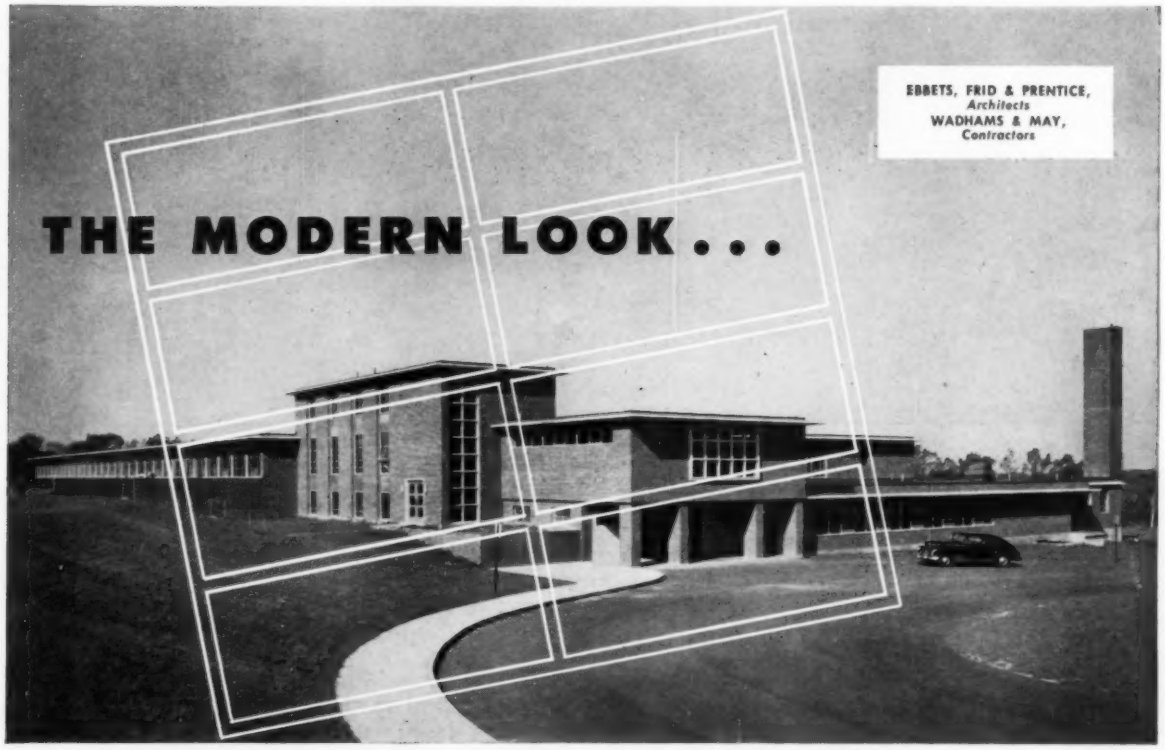
Even on stormy days the floors and stairs in this entrance give walking safety because of ALUNDUM Aggregate in the terrazzo.

Here is attractive appearance as well as safety. In your plans for areas where ordinary floors would be slippery when wet, you can meet this condition by specifying terrazzo with ALUNDUM Aggregate — and you can be sure that your floors and stairs will show no signs of wear after years of heavy traffic.

See Sweets File or write for your own copy of the new edition of catalog 1935-R.

NORTON
NON-SLIP AGGREGATES

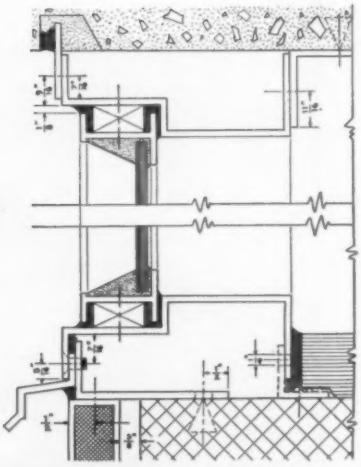
NORTON COMPANY
Worcester 6, Mass.



IN *low-cost* SCHOOL CONSTRUCTION

Beautiful, functional . . . and modern as the generation it serves . . . the Vernon Lydall Street School, Manchester, Conn. And windows . . . VAMPCO ALUMINUM WINDOWS, that is . . . play an important part. Intermediate windows set in special subframes give a feeling of depth and massiveness to the units. Extra beauty, too, because of the effective way the architect used the heavy lines of the window frames. Durability . . . low cost . . . modern beauty; only VAMPCO offers them *all* in *standard* and *custom* windows for institutional construction. Write for complete details!

DETAILS SHOWING SUB-FRAME



VALLEY METAL PRODUCTS CO.

PLAINWELL, MICHIGAN

SUBSIDIARY OF MUELLER BRASS CO., PORT HURON, MICHIGAN

Now in Canada

VAMPCO ALUMINUM PRODUCTS, Ltd.
STRATHROY, ONTARIO

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VAMPCO
A NAME THAT MEANS THE VERY FINEST IN LIFELONG ALUMINUM WINDOWS

VALLEY METAL PRODUCTS COMPANY
Dept. AR-36, Plainwell, Mich.

☐ Please send me 48-Page Catalog of Industrial and Institutional Windows.

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COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

How to pick the right air condition

First: Call in an expert. There are more than 300 of them on our staff . . . skilled American Blower factory and sales engineers from all parts of the country. Each has the know-how and experience to help you select and apply the exact equipment you need—whether it's for a large-scale central or zone system, or a system for a smaller store, showroom, or industrial plant.

Second: Buy dependable equipment. A complete range of individual air conditioning, air handling, heating, and cooling components is available from American Blower to provide the last word in indoor comfort conditioning . . . products which are designed, engineered, and manufactured to work together . . . products which have proved dependable and efficient in thousands of important installations in all parts ot the world.

Call in an American Blower sales engineer to help you pick the right air conditioning equipment for *your* business. Buying from a

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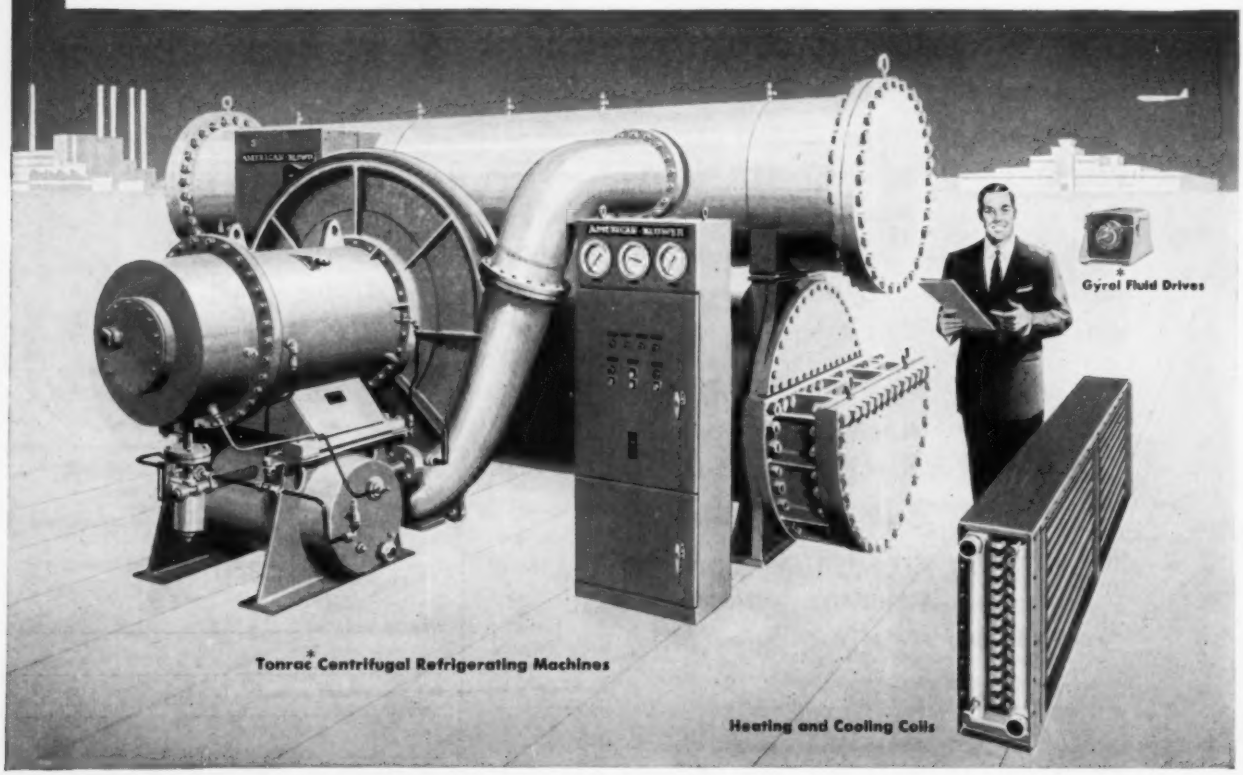

ing equipment for your business

single source gives you a balanced system; pinpoints responsibility for quality, performance, delivery dates . . . saves you time and money. Just get in touch with your nearest American Blower branch office—or, in Canada, your Canadian Sirocco branch office.

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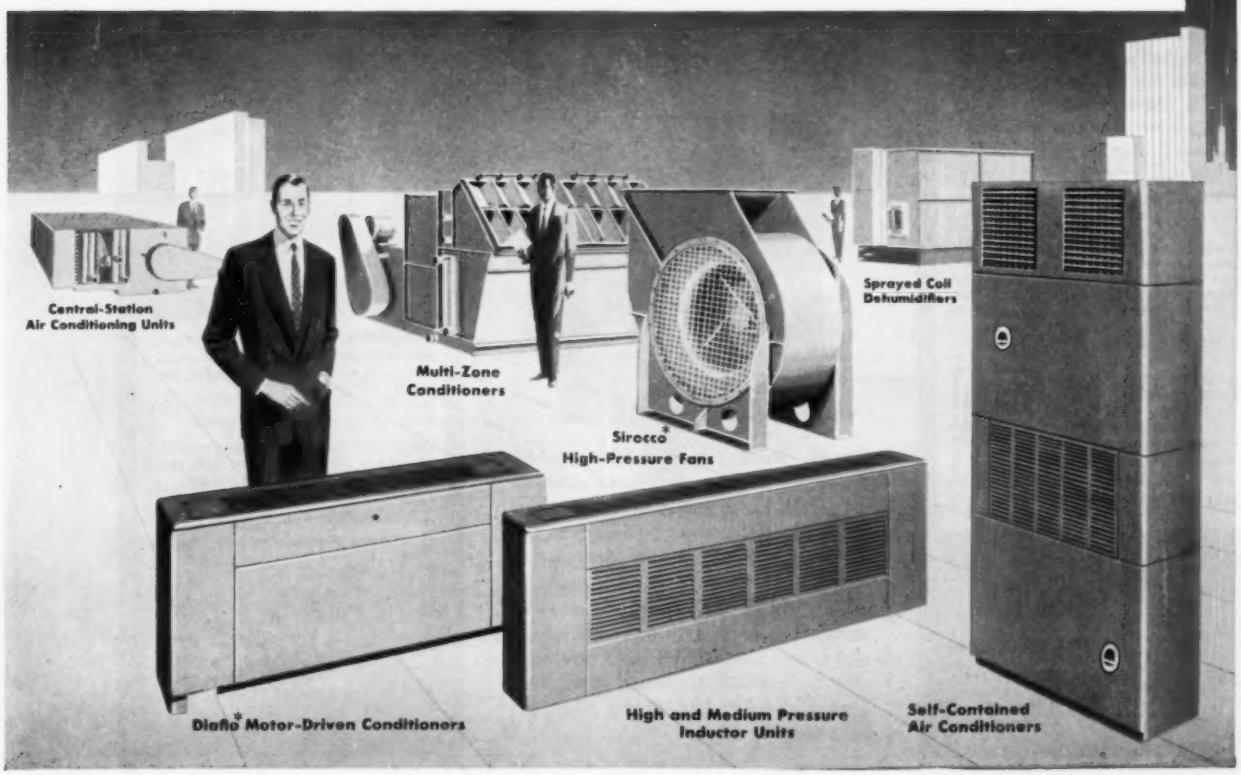
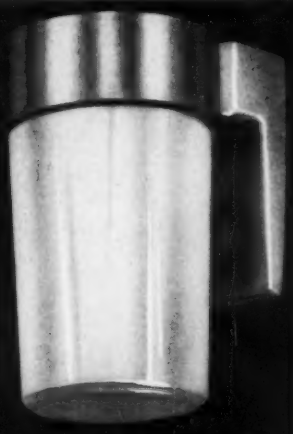
Division of AMERICAN-Standard

AMERICAN 75th ANNIVERSARY YEAR BLOWER

Air conditioning equipment for every business



design by mc Philben



A Vapor-Tight Wall Bracket

dynamically new . . . obsoletes all old wall brackets!

A modern building with yesterday's fixtures is like a lovely woman wearing last year's hat. McPhilben's new multi-use wall bracket the '43-40 series is beautifully honest in design . . . of rugged, no maintenance-needed, die cast aluminum vaportight, versatile and competitively priced.

APPLICATIONS: Stair landings, Corridors, Lavatories and Entrances, Schools, Hospitals, Office buildings and Housing.
SPECIFICATIONS: 43-40 VT, die cast aluminum, satin finish anodized, quickly mounts to 4" cast iron junction box . . . for indoor application suitable for standard outlet box.
WATTAGE: Maximum 100 watt — Globe: Threaded opal with gasket. Write for Data Sheet on complete VAPORTIGHT SERIES.

DIE CAST PROTECTIVE GUARD AVAILABLE (43-44VT) for locations where protection against theft and vandalism is essential. Also available as a ceiling fixture.

1331 Willoughby Avenue, Brooklyn 37, N. Y.

CONSULT mcPhilben Lighting SPECIFY

Representatives in major cities
Stocked By Electrical Wholesalers

PRODUCT REPORTS

(Continued from page 284)

Caulking. Long-life caulking and glazing compounds based on polysulfide liquid polymer formulas are being used to counteract costly leakage in buildings of glass and metal construction. As shown in the photo above, the sealing compound is applied with a pressure gun to the expansion joints. It sets cold to a flexible rubber which takes a firm grip on glass, steel, stone and other materials, remains flexible in temperatures from −65 F to 250 F and resists the aging action of the elements. The compound is produced from liquid polymers manufactured by *Thiokol Chemical Corp., Trenton 7, N. J.*

Ranch Roof combines the over-all durability and protection of built-up roofs with the economy of asphalt shingles. It is designed particularly for roof pitches 3 in. or less. *Ranch Roof* is rolled over asphalt cement spread on one layer of #15 asphalt felt laid dry. It provides shingle exposure and deep shadowlines and is said to have top wind resistance and to provide a strong, tight seal against water backup. *Bird & Son, Inc., East Walpole, Mass.*

(Continued on page 292)

design by mc Philben

EDGE-LITS—Smart new styling features . . . cast aluminum construction, satin finish . . . hinged access doors . . . **Ask for the "45 line".**

SURFACE—Cast aluminum, satin finish and hinged access doors . . . flush, almost invisible hardware . . . "sightline" inscription panels. **Ask for the "40 line".**

RECESSED WALL— Protective guards or shock-resisting panels . . . cast aluminum, satin finish . . . hinged access doors. **Ask for the "54 line".**

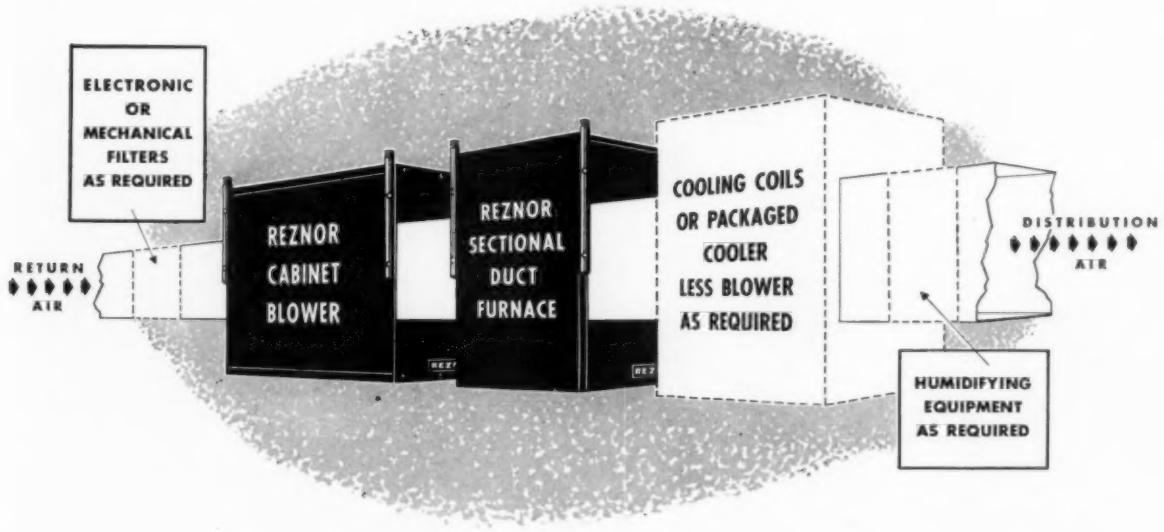
All fixtures available with special wording and 4", 6" or 8" letters with red, green and white color combinations.

1331 Willoughby Ave., Brooklyn 37, N.Y.

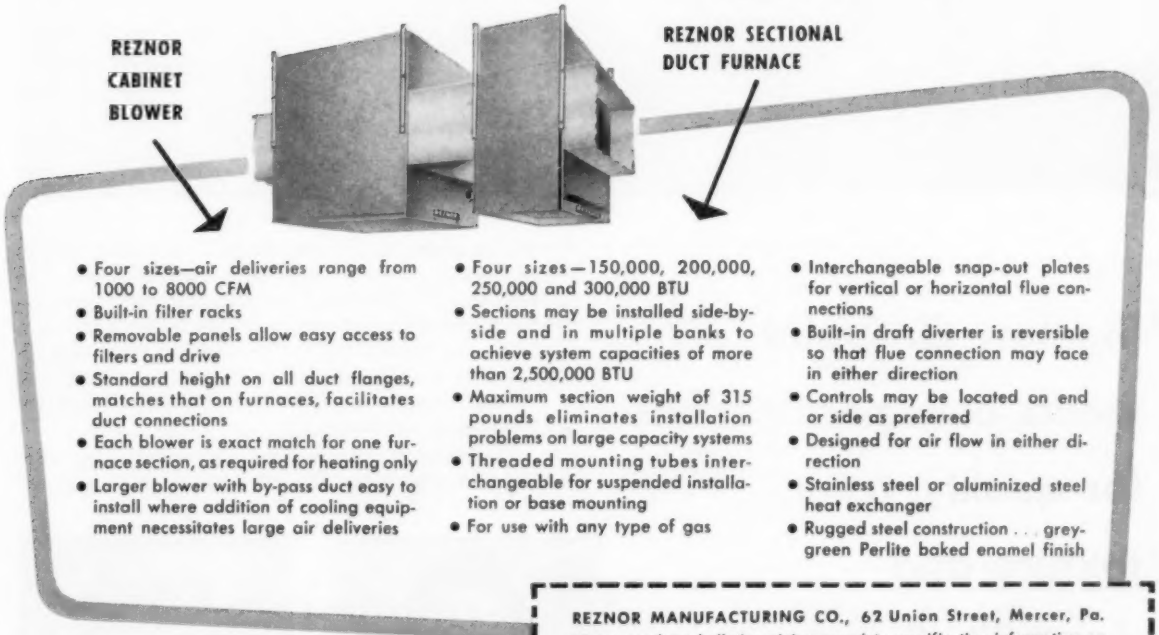
CONSULT mcPhilben Lighting SPECIFY

Representatives in major cities

Here's the right start for a *custom-engineered* heating-cooling system


ELECTRONIC OR MECHANICAL FILTERS AS REQUIRED
RETURN AIR
REZNOR CABINET BLOWER
REZNOR SECTIONAL DUCT FURNACE
COOLING COILS OR PACKAGED COOLER LESS BLOWER AS REQUIRED
DISTRIBUTION AIR
HUMIDIFYING EQUIPMENT AS REQUIRED

You complete the picture by specifying additional components to meet *exact* job requirements



- Four sizes—air deliveries range from 1000 to 8000 CFM
- Built-in filter racks
- Removable panels allow easy access to filters and drive
- Standard height on all duct flanges, matches that on furnaces, facilitates duct connections
- Each blower is exact match for one furnace section, as required for heating only
- Larger blower with by-pass duct easy to install where addition of cooling equipment necessitates large air deliveries

- Four sizes—150,000, 200,000, 250,000 and 300,000 BTU
- Sections may be installed side-by-side and in multiple banks to achieve system capacities of more than 2,500,000 BTU
- Maximum section weight of 315 pounds eliminates installation problems on large capacity systems
- Threaded mounting tubes interchangeable for suspended installation or base mounting
- For use with any type of gas

- Interchangeable snap-out plates for vertical or horizontal flue connections
- Built-in draft diverter is reversible so that flue connection may face in either direction
- Controls may be located on end or side as preferred
- Designed for air flow in either direction
- Stainless steel or aluminized steel heat exchanger
- Rugged steel construction . . . grey-green Perlite baked enamel finish

THERE IS NO "EQUIVALENT" FOR REZNOR GAS HEATERS

REZNOR
THE WORLD'S LARGEST-SELLING GAS UNIT **HEATERS**

REZNOR MANUFACTURING CO., 62 Union Street, Mercer, Pa.
Please send me bulletins giving complete specification information on Reznor sectional duct furnaces and cabinet blowers

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ STATE_____

Lane Bryant Store, Miami Beach, Fla.

"Bigelow Gropoint meets our specifications for quality, color, texture and durability,"

say architects
Sanders, Malsin & Reiman

The outstanding architectural firm of Sanders, Malsin & Reiman numbers the Lane Bryant stores, the Coward Shoe Company, Bostonian Shoes and Grayson's among its distinguished clients. In planning a store, this reputable firm puts behind every specification a complete understanding of merchandising values, attractive design and the need for creating a "selling" environment.

The selection of carpet for the Lane Bryant store in Miami Beach logically fell to Bigelow Gropoint.®

Don Reiman

Arthur Malsin

Only Bigelow Gropoint can offer so much beauty, so much ruggedness of wear under traffic—at so reasonable a cost for a project budget! Gropoint is a Lokweave.® That means the most economical repair of damage or easy relocation.

Here's what Sanders, Malsin & Reiman have to say about Bigelow Gropoint!

"Since the floor is the biggest single surface in any store, it requires careful choice of covering. In this case we chose the charcoal grey Bigelow Gropoint to meet our specifications for quality, color, texture and durability. Bigelow Gropoint enhances the décor, adds to the comfort of customers and personnel."

Consult Bigelow's trained carpet specialists for the right color, pattern and weave...at the right price for your project budget. This service is available to you free of charge.

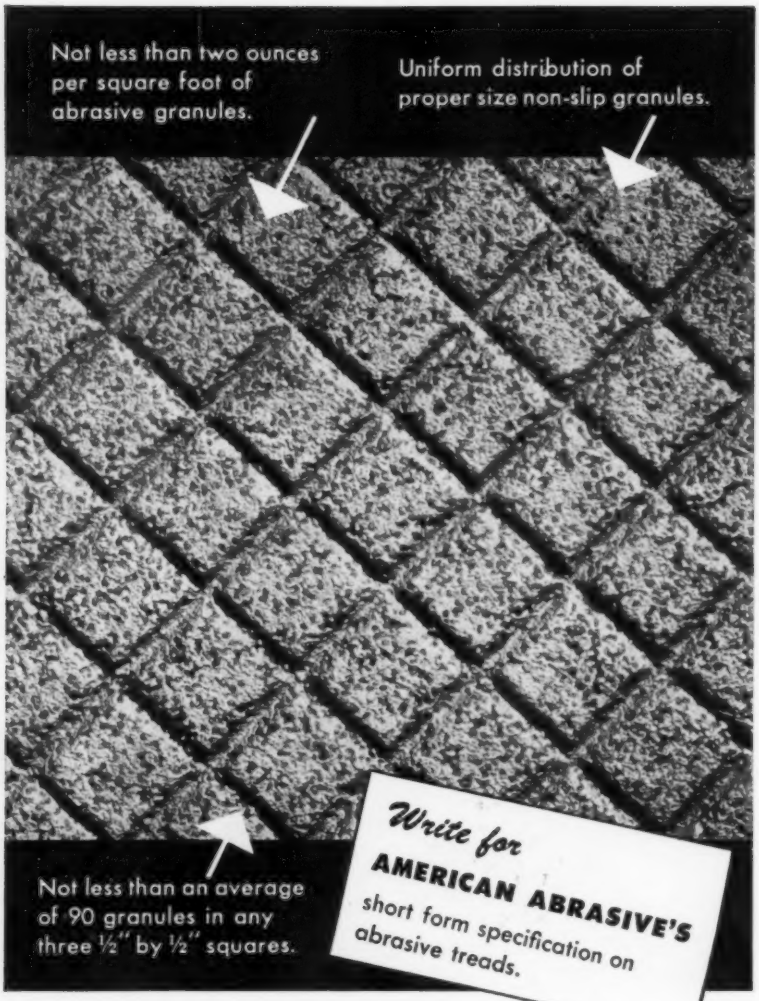
Get in touch with Bigelow today by calling the sales office nearest you or by writing to Bigelow Contract Dept., 140 Madison Avenue, New York 16, N. Y.

BIGELOW Rugs – Carpets

Bigelow... *Number 1 name in Carpets*

Bigelow sales offices are located in the following strategic cities: Atlanta, Ga.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Tex.; Denver, Col.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Kansas City, Mo.; Los Angeles, Calif.; Minneapolis, Minn.; New York, N. Y.; Philadelphia, Penna.; Pittsburgh, Penna.; St. Louis, Mo.; San Francisco, Calif.; Seattle, Wash.

see our catalog in S ARCHITECTURAL FILE 12L Bi or write for copy


Not less than two ounces per square foot of abrasive granules.
Uniform distribution of proper size non-slip granules.
Not less than an average of 90 granules in any three ½" by ½" squares.
Write for AMERICAN ABRASIVE'S short form specification on abrasive treads.

This Unretouched Photograph Proves the Quality of

FERALUN
SAFETY TREADS

This is an unretouched photograph of a Feralun tread taken after acid treatment. (Paint is removed and acid is used to eat away the metal base so as to isolate the actual abrasive content of the tread.) Note the full and even distribution of abrasive — for greater safety, longer wear. In fact, American Abrasive has set the quality standards shown above. That's why Feralun abrasive treads cannot be equalled.

Feralun has provided lasting safety — free from maintenance for the past 35 years. Available as treads, thresholds, floor plates and elevator sills. Also in Bronzalun, Alumalun and Nicalun. See Sweet's Catalog 1955—12b/Am.

AD 120

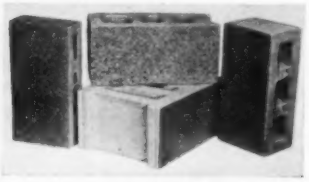
AMERICAN ABRASIVE METALS CO. • IRVINGTON 11, N. J.

PRODUCT REPORTS

(Continued from page 288)

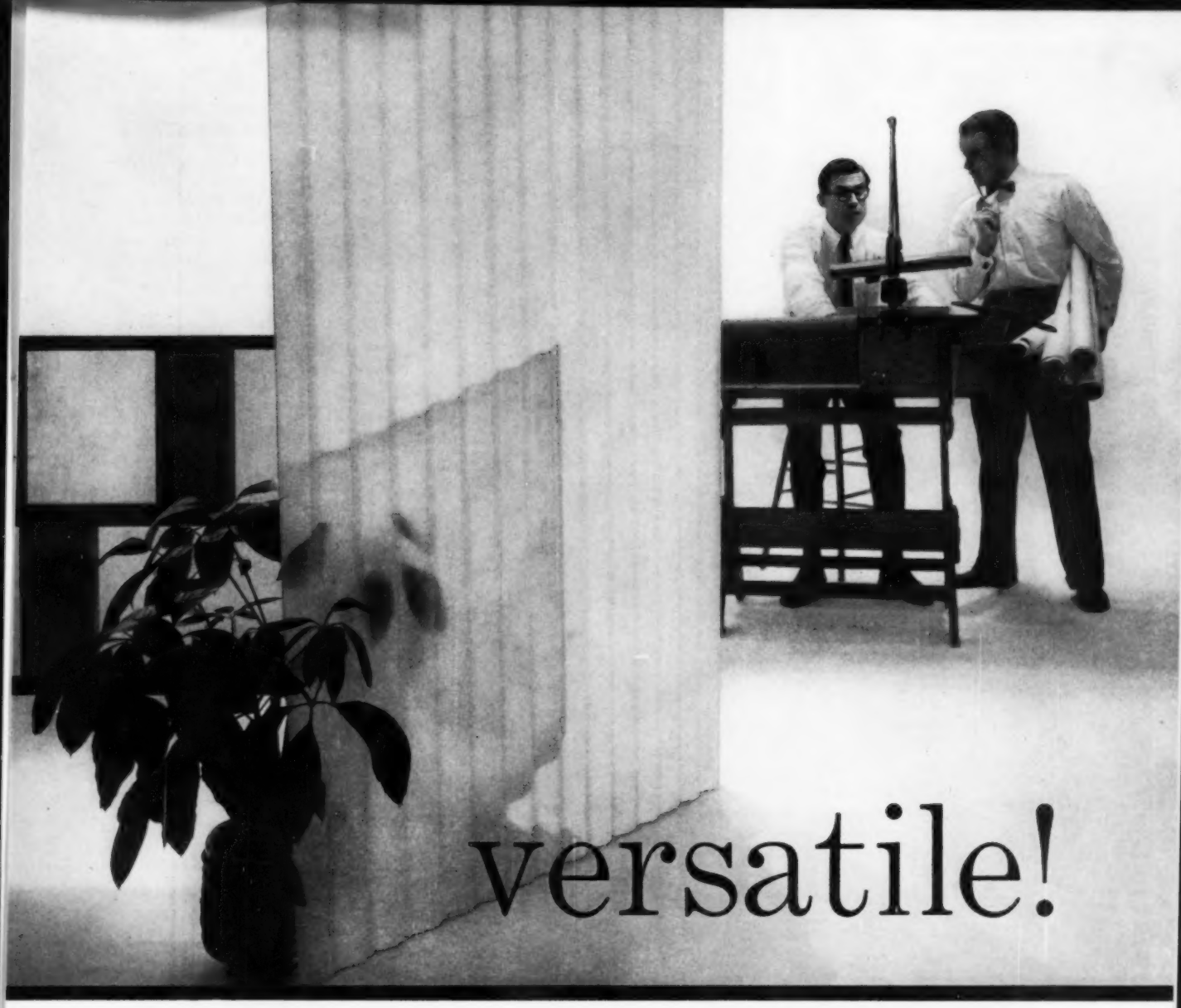
Dot and Dash Lines can be drawn with a rapid stroke of the pencil or ball-point pen with a plastic template 0.0075 in. thick. Six different lines can be produced: long dash, short dash, long dash and dot, short dash and dot, long dash and two dots and short dash and two dots. The hardness of the pencil determines the density of the line. *dot-N-dasher, Box 668, Cresskill, N. J.*

Acoustical Ceiling. *Tectum* ceilings are formed from square-edged, wood fiber panels, nominally 24 by 48 in. in size and only 1 in. thick. They are said to be not only non-combustible and sound-absorbent but also insulating. They can be installed either by mechanical suspension or by nailing to furring strips and can be painted without impairing acoustical properties. *Tectum Div., Peoples Research & Mfg. Co., Newark, Ohio.*



Glazed Blocks make possible a finished structural wall inside and out in a single standard masonry operation and with close dimension tolerances. Manufactured in one monolithic unit in all sizes and shapes produced by modern block-making equipment, they are furnished smooth and true to size by grinding and glazed to a terrazzo, granite or marble finish. *Blocks, Inc., 29 Miller St., Leominster, Mass.*

(Continued on page 294)



This plastic building material is translucent—yet has outstanding structural strength!

Reinforced Plastic Panels were in the experimental stage only a few years ago. Today these panels are established as standard building materials for both new construction and remodeling... as versatile as the imaginative designs of architects and builders.

Molded of fibrous glass blended with polyester resins, the panels are light in weight—yet have outstanding structural strength. They resist shattering, weathering, corrosion, denting—are easy to cut and fabricate—ideal for indoor and outdoor application.

Available in attractive, built-in colors; they need no painting or finishing. Supplied in a wide range of sizes, both corrugated and flat, the panels are translucent—permit passage of a soft, diffused light.

New developments in materials and processing techniques are rapidly broadening the uses of plastics. Many of these developments are already appearing in homes and buildings across the country. Others—still in the exploratory stage—are a forecast of the future... a hint of the versatility of all plastics.

Present and future uses of plastics in building and construction are under constant study by Monsanto's Structural Plastics Engineering Group. Check with them for expert technical advice on *Plastics in Building.*

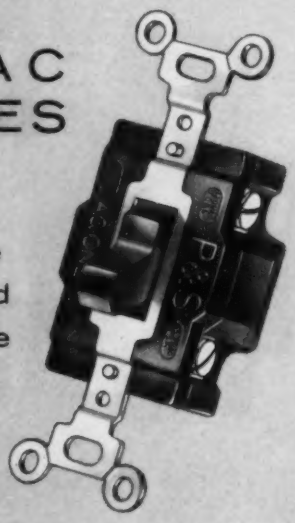
A NEW REPORT, "Plastics in Housing," has recently been published by the Department of Architecture of The Massachusetts Institute of Technology. The M. I. T. study was made possible by a Monsanto grant-in-aid. Copies are available at $2.00 each. Address Monsanto Chemical Company, Plastics Division, Room 233, Springfield 2, Mass.

MONSANTO

FOR SUPER PERFORMANCE

SPECIFY P&S SUPER AC SWITCHES

For Extra Long Life
at Full Rated Load
Maximum Service
Quiet Operation



15 and 20 Ampere Types

Finest materials and extra rugged construction make P&S Super AC Switches the best switches for continuous heavy duty operation.

They can be installed in any position, are adaptable for back or side wiring, and will take up to No. 10 wire. P&S Super AC Switches are approved by Underwriters' Laboratories, Inc., for use up to full rated capacity for:

1. Fluorescent lamp loads up to full rated capacity at voltages from 120 to 277.
2. Inductive loads up to 277 Volts at full rated capacity.
3. Incandescent lamp loads to full rated capacity.
4. Motor loads up to 277 Volts at 80% of current rating of switch.

PLUS – Totally Enclosed Switch Mechanism – Easy To Install – Large Silver Alloy Contacts That Prevent Overheating – Single Pole, Double Pole, 3-Way and 4-Way – Large Head Binding Screws.

Write today for complete information to Dept. AR–II

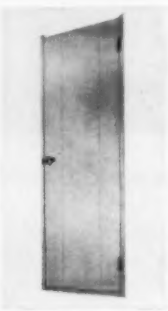
P&S PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
71 Murray St., New York 7, N.Y. 1229 W. Washington Blvd., Chicago 7, Ill.
In Canada: Renfrew Elec. & Refrig. Co., Ltd., Renfrew, Ontario

PRODUCT REPORTS

(Continued from page 292)

Vinyl-Asbestos Tile Flooring has been color-coordinated with the popular new shades in ceramic tile, plastic wall tile, paint, laminates and appliances. Called the Margaret Lowe Colors in *Matico* Confetti Aristoflex, the thirteen new shades will be available in addition to the regular Confetti Aristoflex line. *Mastic Tile Corp. of America, Newburgh, N. Y.*

Fire-Vent Skylight, fabricated of fiber glass reinforced translucent plastic panels set in an extruded aluminum frame, gives automatic and immediate ventilation in case of fire. A fusible link, separated by fire or excessive heat, causes the cover section to open and remain open until manually closed. The Marcolite Fire-Vent Model is equipped with self-contained curb and roof flange and is designed for installation directly to roof opening. *The Marco Co., 45 Greenwood Ave., East Orange, N. J.*



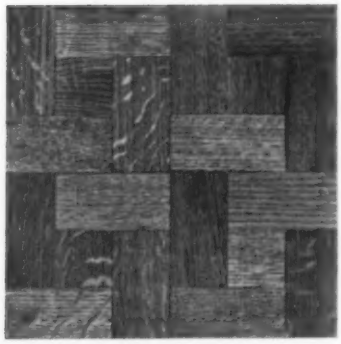
Steel Doors and Frames for residential and commercial use are available with glass panels, vision lights and louvers and a baked-on prime finish or choice of colors. They are also available with a wood grain finish. The full line of sound-deadened, fire-resistant doors and frames includes 1⅜-in. doors for residences, housing projects and apartments and 1¾-in. doors for hotels, motels, office buildings and institutions. *Steelcraft Mfg. Co., 9017 Blue Ash Rd., Rossmoyne, Ohio.*

(Continued on page 298)

Haddon Hall pattern in Walnut

LOW-COST LUXURY !

Wood-Mosaic's *Haddon Hall* pattern Hardwood Flooring



Haddon Hall pattern in Brown Oak

Here's parquetry hardwood flooring matching that of bygone days for beauty and craftsmanship, yet within your building budget. Haddon Hall is a direct reproduction of the charming basketweave design of the classic English Haddon Hall pattern. It is easily adapted to a wide variety of today's interior schemes.

Pre-finished and factory-assembled, Haddon Hall is shipped to your construction site ready for easy installation. For complete specifications see Sweet's 1956 Catalogue or write direct to . . .

Wood-Mosaic

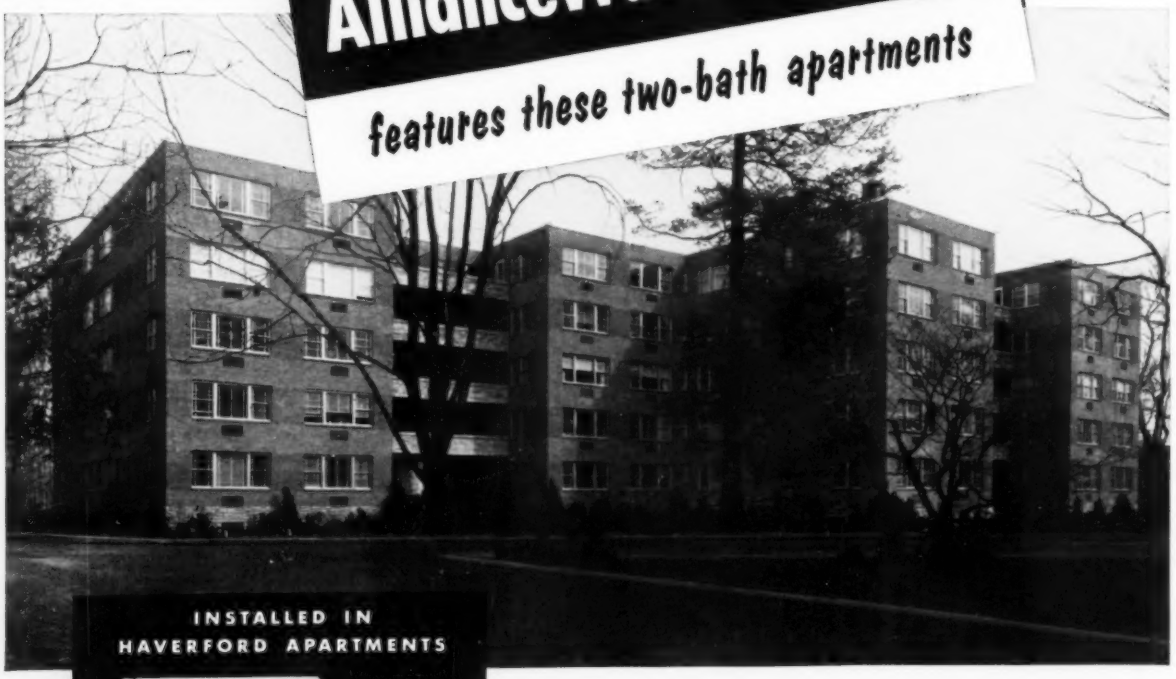
PARKAY, Inc. Division

LOUISVILLE 9, KENTUCKY

Maker of the World's Finest Hardwood Flooring since 1883

AllianceWare *in Color*

features these two-bath apartments



429 Apartments, Haverford, Penna.—*Owners:* J. M. Arovitch, K. K. Kaiserman; *Plumbing Contractor:* Wilmer W. Watson, Drexel Hill, Penna.; *Plumbing Wholesaler:* M. Schnyder & Co., Inc., Philadelphia, Penna.

Styled as the "429 Apartments" in Haverford, one of the finest residential areas of Philadelphia, Pa., these attractive buildings comprise 60 apartment suites, each with two bathrooms. A similar apartment of 80 units is now under construction and follows the same specifications as the "429 Apartments."

AllianceWare—bathtubs, lavatories and closets—*in color*—are installed in every bathroom. Each kitchen is equipped with an AllianceWare flat rim sink with faucet ledge.

Discriminating architects, builders, and owners recognize the unusual values of AllianceWare—porcelain-on-steel. That's why you will find AllianceWare in the largest homes, apartments and hotels—and modest, one-family homes, too.

There is only one quality to AllianceWare—the very best we know how to produce. Every AllianceWare tub has a patented "grab-rail" construction for safety in entering and leaving the bath. The exclusive AllianceWare wall hung method of installation keeps tubs from shifting or settling. The AllianceWare wall-guard flange prevents seepage where the tub joins the wall.

Lighter weight makes handling and installation easier. And there's a choice of five beautiful colors as well as white. Write for complete specification sheets.

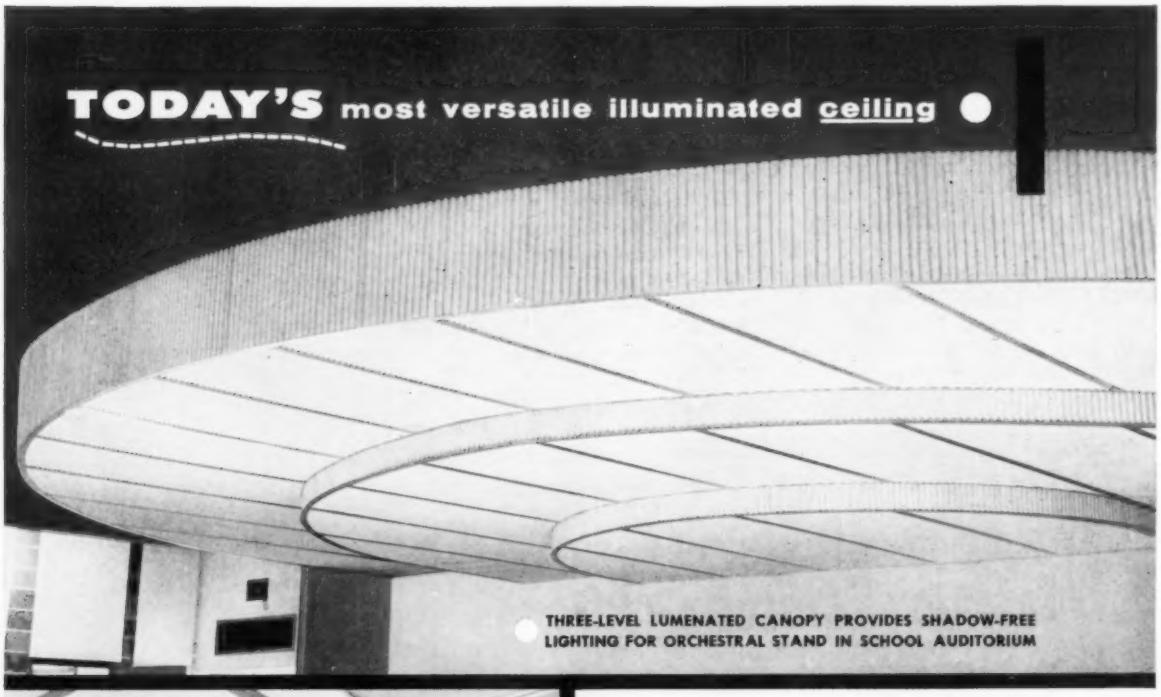
AllianceWare
PORCELAIN ON STEEL

ALLIANCEWARE, INC. • Alliance, Ohio

Plants in Alliance, Ohio, Colton, California and Kilgore, Texas

Bathtubs • Lavatories • Closets • Sinks

TODAY'S most versatile illuminated ceiling



THREE-LEVEL LUMENATED CANOPY PROVIDES SHADOW-FREE LIGHTING FOR ORCHESTRAL STAND IN SCHOOL AUDITORIUM

The Lumenated Ceiling is readily adapted to highlighting sections of an interior, such as this bar, or a merchandise display in a store, or inspection room in a factory.

In private and general offices, the Lumenated Ceiling diffuses light uniformly without glare, shadows or high spots and, at the same time, conceals piping, conduits, sprinkler heads and air conditioning ducts. Underwriters' Laboratories' Label Fire Retardant No. 3866.

for custom-made effects,
for uniform wall-to-wall lighting . . .

the LUMENATED Ceiling
by thermotank

In the Lumenated Ceiling by Thermotank you get something more than the recognized advantages of this modern development in ceiling design and in soft, diffused, wall-to-wall illumination.

Now, with the Lumenated Ceiling, you can plan the custom-made effects you want. The direction of the corrugated vinyl plastic sheets can be varied to form interesting patterns; tracks can be alternated or radiused in a horizontal or vertical plane, a feature especially desirable when treating a ceiling with more than one level. Such flexibility makes the Lumenated Ceiling ideally suited for new construction or remodeling interiors of offices, banks, stores, hospitals, schools, hotels and houses.

Write for name of nearest representative or contact the local Westinghouse Electric Supply Co. See 1956 Sweet's 7d-Lu or mail coupon for booklet. Thermotank, Inc., Detroit 34.

JOHN J. FANNON & COMPANY
1469 ALGONQUIN AVE., DETROIT 15, MICH.

Please send me Thermotank's Lumenated Ceiling booklet LC-7 and name of nearest representative.

Name_____

Organization_____

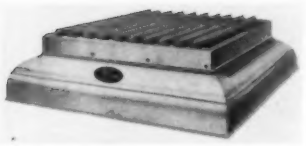
Address_____

City_____ Zone_____ State_____

(Continued from page 294)

Fireproof Roofs. During recent Underwriters' tests, a roof construction consisting of a 3-in. layer of vermiculite aggregate concrete poured over unprotected metal decking was given a 1½-hr fire rating, believed to be the highest safety fire rating given any roof deck without a fire-protective barrier immediately below the roof. As a result of the test, according to the manufacturer, insurance rates are being cut for new commercial, industrial and school buildings using this roof system. *Zonolite Co., 135 So. LaSalle St., Chicago, Ill.*

Roof Exhauster. The *AlumaLung*, built entirely of heavy-wall, extruded aluminum sections with welded joints, is said to weigh one-third less than a galvanized steel ventilator of the same capacity without any sacrifice of strength or rigidity. Impervious to rust or corrosion inside or out, the leakproof exhauster has an over-all height of only



21 in. It is available in sizes of 20, 24, 30, 36, 42, 48 and 60 in. and in capacities of 3800 to 42,000 cfm. *Iron Lung Ventilator Co., 5403 Prospect Ave., Cleveland 3.*

DEPENDABLE

Interior Communications & Fire Alarm Systems

PRIVATE TELEPHONE SYSTEMS
Couch BULLETIN 121

Simple and multiple phone systems for communication between two or up to 200 points.

APARTMENT HOUSE PHONES
Couch BULLETIN 128

Phone systems for communication between apartments, entrances, superintendent, office, trade entrances, garage, etc.

FIRE ALARM SYSTEMS
Couch BULLETIN 124

Manual and automatic fire alarm systems for coded and non-coded applications.

HOSPITAL SIGNALLING
Couch BULLETIN 125

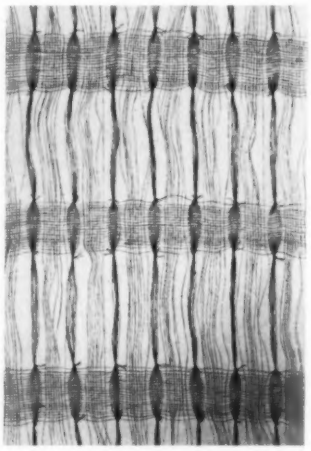
Visual and audio-visual patient- nurse call systems. Staff in-and-out registers and paging systems.

DATA SHEETS AND BULLETINS AVAILABLE UPON REQUEST.

Built-in Dependability

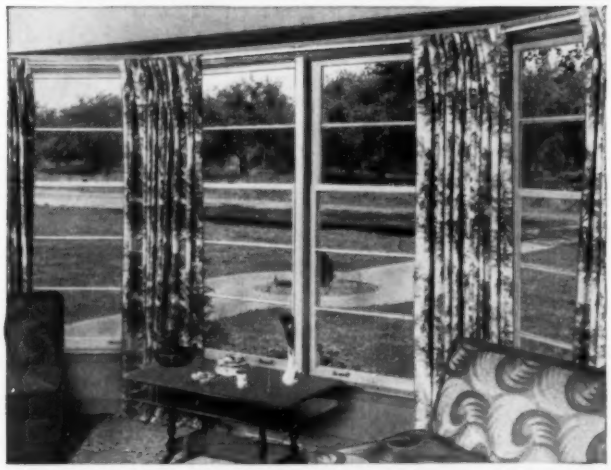
S. H. Couch Company, Inc.

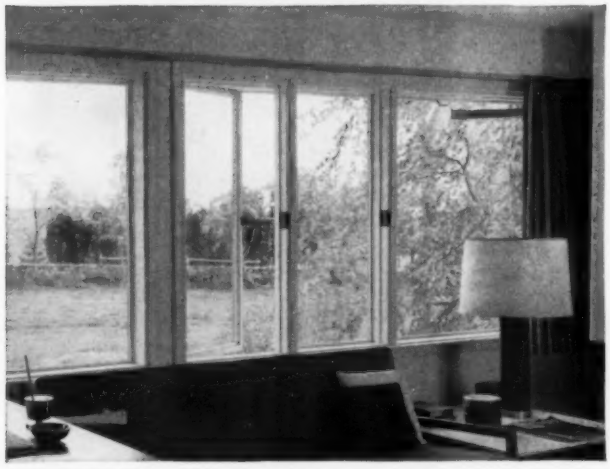
NORTH QUINCY 71, MASSACHUSETTS



Fabrics. *Fisherman's Luck*, shown above, is a hand-knotted, lace-like weave of linen finish having a count of 25 lea, especially appropriate for expansive glass areas to provide some privacy without obscuring the vista. It is one of many woven patterns and printed effects that are part of the "'56 Collection" of casement cloths, upholstery textures, hand prints, imported hand-loomed woolens and hand-woven blinds by *Isabel Scott Fabrics Corp., 515 Madison Ave., New York 22, N. Y.*

Fire Alarm System to protect a 5- to 7-room house with rooms up to 20,000 sq ft consists of a heavy-duty control panel with battery testing meter and 9-volt battery, 6-in. inside alarm, 10-in. outside gong in weatherproof cabinet and eight combination rate-of-rise, fixed-temperature detectors. *Fire-Lite Alarm Systems, Inc., New Haven 2, Conn.*





For the best in windows, look to

CURTIS

WOODWORK

heart of the home

Curtis Silentite windows are sold by leading lumber and building materials dealers everywhere. See *your* dealer soon—and mail the coupon for literature.

To make any home "different"—

Curtis *Silentite Convertible windows*

Because they can be used in so many different ways for different homes, Curtis Silentite Convertible wood windows provide distinctive individuality—avoiding the monotony of "look-alikes." Silentite Convertibles can be used as awning sash ...as casements... as fixed sash in window walls ...or as ribbon windows. Available in 11 sizes of sash units and three stationary frames. The hardware is lifetime-lasting, good-looking nylon Zytel.

To make any home more weather-tight—

Curtis *Silentite double-hung windows*

Air leakage...heat loss...have been cut to a new low in the Curtis Silentite double-hung wood window. Self-adjusting or "floating" weatherstrips assure year-round protection from weather and dust, yet leave the sash free-moving. Spring suspension provides finger-tip operation throughout the life of the house. Like all Curtis Silentite windows, it is *guaranteed.* Curtis Silentite double-hung wood window units are available in 7 different designs and in all the commonly used sizes.

To make any home more beautiful... more practical—

Curtis *Silentite casements*

Casements can be practical as well as beautiful—they need not stick, swing or rattle. In the Curtis Silentite casement, all the beauty has been retained —and all the unpleasantness eliminated. These complete pre-fit casement units are so weathertight that independent tests show 41% less heat loss...45% less air infiltration...than standard competitive casements. Like all Curtis windows, these casements are preservative water repellent treated for long life. They are available in two widths and three sash types.

1865 CURTIS WOODWORK

Curtis Companies Service Bureau
200 Curtis Building
Clinton, Iowa

AR-356

Please send information on Curtis Silentite windows.

Name.....

Address.....

City.....*State*.....

Carrier again makes news

A new centrifugal for air conditioning

From Carrier—the people who built the *first* centrifugal refrigerating machine—now comes a *new* centrifugal designed especially for big building air conditioning, and for chilling water for industries.

It's a hermetic—**WITH CARRENE-COOLED MOTOR** . . . exclusive with Carrier! Cool, dry refrigerant gas from the refrigerating circuit keeps motor temperatures at a uniform level under all load conditions.

It's a hermetic—**WITH ELECTRONIC CONTROLS** . . . exclusive with Carrier! You push a single button and electronic controls take over the entire operation, including starting, stopping, part load, and protection of the machine under all conditions.

It's a hermetic—**WITH CENTRAL CONTROL CONSOLE** . . . exclusive with Carrier! All control functions are co-ordinated in a central console. You can locate this nerve center right by the machine, or in the next room.

It's a hermetic—**WITH HYDRAULIC CAPACITY VANES** . . . exclusive with Carrier! Capacity regulating prewhirl vanes are *positively* positioned by hydraulic power under the automatic control of the electronic system.

Get the full story—*now*. Call the nearest Carrier office for your copy of the big, new factual booklet on Carrier *Hermetic* Centrifugal Refrigerating Machines. Or write Carrier Corporation, Syracuse, New York.

Carrier

air conditioning
refrigeration
industrial heating

OFFICE LITERATURE

(Continued from page 240)

Venting. *Bulletin A-102* describes in detail new *Airfoil* centrifugal fans applicable to forced and induced draft systems. *Chicago Blower Corp., 9869 Pacific Ave., Franklin Park, Ill.*

Fluorescent Troffers. Engineering and installation data for *Corralume, Corraline* and *Corralourer* troffers are given in a brochure published by *Day-Brite Lighting, Inc., St. Louis 7, Mo.*

Parking System which utilizes a crane-like movable tower with a two-car-capacity elevator, and which can be erected up to 12 stories high, is described in a bulletin available from *Harnischfeger Corp., P&H Parking Div. (Mr. O. Fuller, Mgr.), Milwaukee, Wis.*

Glass Fiber Products for heat control, sound absorption, vibration and shock control, electrical insulation and plastics reinforcement are described in Form WPD-11 available from *LOF Glass Fibers Co., 1810 Madison Ave., Toledo 1.**

Visual Merchandising Equipment. *Spacemaker* equipment for automotive, department, drug, hardware and variety stores and also accessory equipment are described in a 128-page catalog from *Reflector Hardware Corp., 2235 South Western Ave., Chicago 8, Ill.*

Overhead Heating and Cooling Units. Two *Shafconaire* bulletins, 4 and 5, present technical data and details on suspended heating and cooling units combined to utilize the same duct system and suspended warm air furnaces, respectively, for supermarkets and warehouses. *OverHead Heaters, Inc., 1612 Book Building, Detroit 26, Mich.*

Architectural Porcelain in Shopping Centers is discussed, with detail drawings and specifications, in a 4-page folder (AIA File 15-H-2) from *Davidson Enamel Products, Inc., 1116 E. Kibby St., Lima, Ohio.**

Pressure Treated Timber Foundation Piles is the title of a 66-page booklet which includes pile driving formulas, means for determining safe loads, methods of solving problems of uplift and lateral forces and protective devices for use during driving. *American Wood Preservers Institute, 111 W. Washington St., Chicago 2, Ill.*

Electric Panelboards. *Modern Panelboards* is a 75-page catalog (No. 3–205) of circuit breakers and fusible disconnect devices used in lighting and distribution panelboards. It includes 20 pages of engineering data. *Federal Pacific Electric Co., 50 Paris St., Newark 1, N. J.*

Brick. An 8-page brochure describes and pictures the shapes and color variations of brick produced by the *Sayre & Fisher Brick Co., Sayreville, N. J.**

Aluminum Industrial Building Products, including box-ribbed embossed siding, corrugated roofing and siding and field-fabricated sandwich walls, are covered in a 16-page booklet (AIA File 12-C) from *Kaiser Aluminum, Industrial Service Div. PR 156, 1924 Broadway, Oakland 12, Calif.**

Elevator Doors. Freight elevator hoistway doors and vertical lifting car gates are discussed, with operating and design features and layout and installation data, in a 12-page brochure (AIA File 33G) from *Otis Elevator Co., 260 11th Ave., New York 1, N. Y.*

(Continued on page 306)

Pre-built units matching standard Huntington patterns are effectively used at Morris Harvey College, Charleston, W. Va., by architect Charles A. Haviland, A.I.A.

You're sure of top quality when you specify

HUNTINGTON *Pre-Built Units*

"Made better to look better and last longer"

Complete specifications and detail drawings are available, based on recommendations by leading architects, and covering every aspect of materials and assembly.

Ready for installation on delivery, these pre-built units require no further carpentry or finishing. On-the-site millwork cannot duplicate Huntington's high-quality cabinet work, eye-appealing appearance, solid construction in durable hardwoods, easy and inexpensive maintenance.

Harmonious unified effects are achieved by matching styles and finishes of standard and custom-made pre-built units with Huntington's over 179 versatile seating, sleeping, and case goods patterns.

Economical prices reflect the savings created by high-volume production, with rigid quality controls maintaining Huntington standards of excellence. All costs can be included in construction charges under FHA mortgage requirements.

HUNTINGTON FURNITURE

HUNTINGTON CHAIR CORPORATION
Huntington, West Virginia
Showrooms: Huntington
New York • Chicago • Miami

For specifications and detail drawings, along with information on how Huntington pre-built units will meet your needs at low initial cost and low upkeep cost, simply cut out this coupon and send it with your organization letterhead today—without any charge or obligation.

"Huntington's good taste and high quality are always impressive, never expensive."

B-2

1

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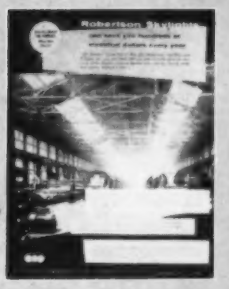

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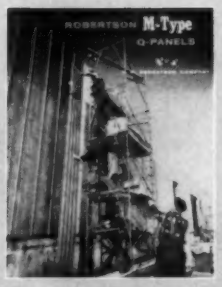

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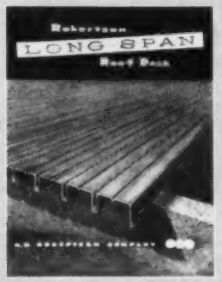

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8

Write- for these free books from Robertson's technical library

1. **Acoustical Data on Q-Deck:** It has long been known that the fluted underside of steel deck provides some acoustical value, yet demand for more has led to this new low-cost method. Application details and test data are included.

2. **An Analysis of Industrial Roof Construction:** This valuable booklet compares all the better-known roof types (flat, monitor, bow-string, high-low bay, saw tooth) on the basis of structural steel, volume, roofing, sash area, flashing, ventilation and daylighting.

3. **Design and Cost Factors of Structural Floor Wiring:** This study compares Q-Floor with other conventional floor systems using underfloor duct. Based upon a typical multi-story building, the book is replete with charts and cost analyses of all structural components.

4. **Daylighting Cost Analysis:** This new and unusual study contains a questionnaire, which when properly filled out will reveal how quickly scientifically planned natural daylighting will pay for itself in a structure through savings in electricity. All data are substantiated.

5. **New Composite Q-Floor Catalog:** This newly revised catalog contains many examples of the latest Q-Floor buildings and a full exposition of Q-Floor advantages. Structural details and specifications are more complete than ever before.

6. **New M-Type Q-Panel Catalog:** Recent newcomer to the Robertson product family is the M-Type Q-Panel which possesses unique advantages over other types of modern curtain wall construction. The book contains 3 pages of structural details plus complete specifications.

7. **New Long-Span Q-Deck Catalog:** Another new Robertson product is this sturdy, yet exceptionally long-span deck. Easy to handle and erect despite its length up to 32 feet, it is especially designed for schools and supermarkets and other structures in which unbroken spans and a saving of structural steel is beneficial.

8. **Ventilation Engineering Booklet:** More than a ventilator catalog, this booklet not only describes products, but contains detailed tables of exhaust capacities, based upon average wind velocities, temperature differences and height above intake. Use the coupon below.

Robertson Products

for modern buildings

H. H. Robertson Company
2404 Farmers Bank Building, Pittsburgh 22, Pa.
In England: Robertson Thain Ltd., Ellesmere Port, Cheshire
In Canada: Robertson-Irwin Ltd., Hamilton, Ontario
Offices in Principal Cities

Please send the free data book(s) I have circled below.

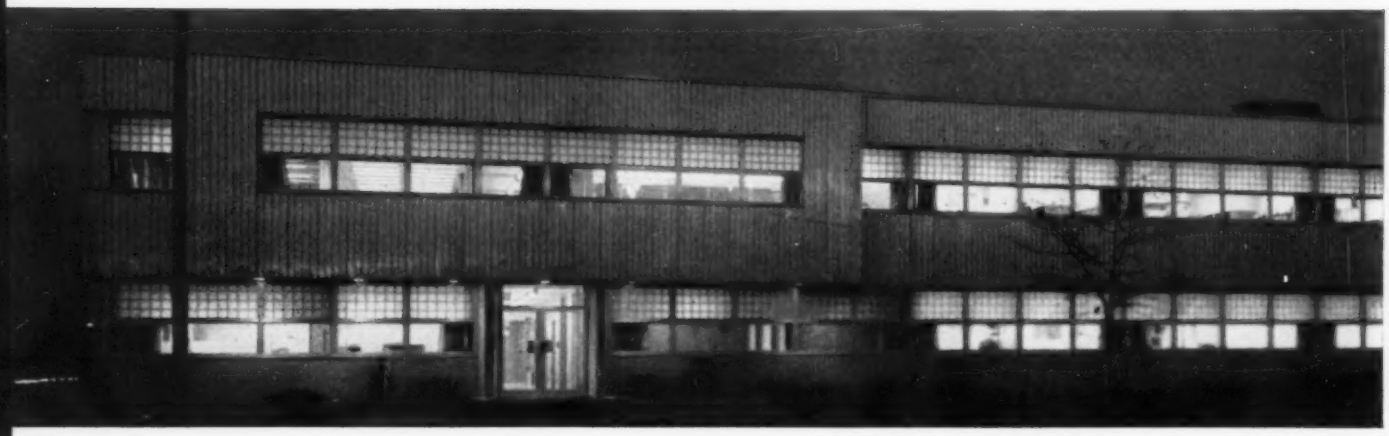
1 2 3 4 5 6 7 8

NAME _____

FIRM _____

ADDRESS _____

Owens-Illinois Technical Center, Toledo, Ohio . . . Architects: Holabird, Root and Burgee, Chicago; Architect-coordinator for Owens-Illinois: Mr. H. P. Maas; General Contractor: George A. Fuller & Sons, Chicago; Electrical Contractor: Romanoff Electric Co., Toledo.



Looking into the future... with lighting by Day-Brite

The many phases of research pursued in the new Owens-Illinois Technical Center involve a lot of looking into the future of glass. This calls for the best in seeing—present and future. Day-Brite lighting, of course, was the logical choice—in the glass technology laboratory, engineering department, machine shop, administrative service offices, even in the cafeteria!

Architects and Engineers looking for present and future lighting satisfaction, specify Day-Brite. It is the classic line of light that lends itself to any architectural design, treatment and type of construction . . . SEE, EXAMINE and COMPARE Day-Brite—look at the fixtures, not just the pictures. Your Day-Brite representative will gladly show you—look for him in your classified phone directory.

NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

Typical Engineering Area lighted with Day-Brite 1-ft. x 4-ft. troffers with Corning #70 glass lenses. Note over-all surface illumination on desk tops and drawing boards.

Cafeteria, lighted with Day-Brite 2-ft. x 4-ft. Mobilex,® grid type, with Corning #70 glass lenses.

Administrative Service Office, where Day-Brite 1-ft. x 4-ft. troffers with Corning #70 glass lenses maintain comfort seeing levels on all work areas.

Glass Technology Laboratory, where Day-Brite CFI-10 *(Comfort For Industry)* lighting helps wash out ceiling contrasts by utilizing 10% *upward* lighting. Day-Brite CFI fixtures provide added light at no added cost.

61101

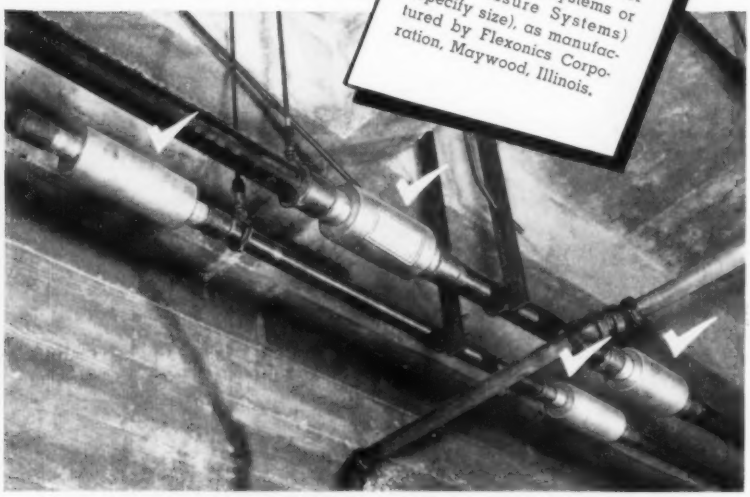
"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

Day-Brite Lighting, Inc.
5465 Bulwer Ave.,
St. Louis 7, Missouri

NOTE: All ceilings are suspended grid type, using Owens-Corning Fiberglas.

This specification

The contractor shall furnish and install as shown on plans, and in accordance with instructions furnished by the manufacturer, the (Model H or Model L) Flexon Expansion Compensator for (High Pressure Systems or Low Pressure Systems) (Specify size), as manufactured by Flexonics Corporation, Maywood, Illinois.



. . . assures freedom from expansion problems and related troubles in heating system piping

For Medium and High Pressure Piping—

FLEXON® EXPANSION JOINTS

FREE FLEXING TYPE—Available in sizes from 3" through 48", I.D. For pressures to 50 psi and temperatures to 850° F.

CONTROLLED FLEXING TYPE—Available in sizes from 3" through 24", I.D. For pressures from vacuum to 300 psi and temperatures to 850°F.

DESIGN GUIDE—The Flexon Expansion Joint Design Guide is a 24 page handbook on the selection and application of expansion joints. Write for your free copy, today.

When you make this specification you know you are preventing problems from heating system piping expansion.

Flexonics Corporation provides the complete package to solve these problems—a low pressure unit for horizontal steam and water lines . . . a high pressure type for steam and hot water risers and horizontal runs.

Ideally suited for all types of buildings, the Flexon® Expansion Compensators eliminate the noise of pipe creeping and assure long leakproof service. The units have been especially designed to replace outmoded, troublesome methods of pipe line expansion control. They are space savers and easily installed, becoming an integral part of the pipe line. No access panels are required because there is no maintenance—for the life of the heating system.

Bulletin 151, a detailed guide to specification of heating system expansion control is available upon request. No obligation, of course.

See Sweets' Architectural File—Section 27a/Fl

EC-15

FLEXON® QUALITY
proved in service and backed by over 54 years manufacturing experience

Flexonics *Corporation*
EXPANSION JOINT DIVISION
1366 S. THIRD AVENUE, MAYWOOD, ILLINOIS
FORMERLY CHICAGO METAL HOSE CORPORATION
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

OFFICE LITERATURE

(Continued from page 302)

Vapor Barrier. *Brownskin Foil Barrier*, a new moisture-vapor barrier particularly applicable in low-temperature installations, is described in a 2-page sheet (AIA File 37-E-1) from *Angier Corp., Framingham, Mass.**

Architectural Steel. "Special Purpose Steels for Architectural Beauty and Permanence" is the title of an 8-page brochure which covers properties, uses and specifications for stainless steels, aluminum-coated sheet steel and enameling iron. P.O. 4855. *Armco Steel Corp., Middletown, Ohio.**

Shower Heads. Data on 18 models of *Act-O-Matic* shower heads for use on standard shower arms, and 23 models for institutional installations, are presented in a 12-page catalog (AIA File 29-H-3) from *Sloan Valve Co., 4300 West Lake St., Chicago 24, Ill.**

Carpets. "Cutting Costs with Carpet" is the title of an 8-page report which discusses the findings of a study carried out by Industrial Sanitation Counselors, Inc., and initiated by the *Carpet Institute, Inc., 350 Fifth Ave., New York 1, N. Y.*

Red Cedar Deck, combining roof, ceiling and insulation in one 4- by 5-in. structural member, is discussed in a 4-page brochure (AIA File 19-B-3) issued by *Rilco Laminated Products, Inc., 2591 First National Bank Bldg., St. Paul 1, Minn.*

Vibration Control. *Isolant*, a granular vibration control material for massive machinery, is described, with details, specifications and engineering data, in *Catalog IS-55* from *T. R. Finn & Co., Inc., Industrial Div., 200 Central Ave., Hawthorne, N. J.*

Blond Hardboard. The various *Oregonbond* wood building products — ribbed, planked, corrugated, perforated and smooth — are presented, with descriptions and physical properties, in a 4-page folder (AIA File 23-L) from *Chapman Mfg. Co., Corvallis, Ore.**

Venting. Engineering data are presented for a variety of roof exhausts and fans in *Bulletin 56*, 8 pp (AIA File 12-K). *Western Engineering and Mfg. Co., 4116 Glencoe Ave., Venice, Calif.**

(Continued on page 310)

Maine tannery gets built-in protection from corrosion and decay

At South Paris, Maine, a $2 million processing plant was recently completed for the A. C. Lawrence Leather Company, a division of Swift & Co., Inc. When selecting the material for the roof framing, the company's engineers were faced with an unusual construction problem.

Chemical fumes and high humidity, common to all tanneries, would quickly corrode exposed metal or promote decay in ordinary lumber. So, after careful deliberation, A. C. Lawrence Leather Company's engineers specified Wolmanized® lumber. This *protected* lumber was used for the prefabricated monochord trusses, bracing, purlins and decks—over 600,000 board feet in all.

Wolmanized lumber is *fully* protected against termites and rot by pressure treatment with a chemical preservative. Under conditions of severe exposure, it has given decades of service in textile mills, water works and paper mills. Wolmanized lumber, therefore, is widely used in factories, homes, schools and hospitals.

It is not surprising, then, that Wolmanized lumber is specified by more architects than any other kind of treated lumber. Wolmanized lumber is sold through wood preservers and lumber dealers throughout the country. Send coupon for free illustrated booklet that covers product advantages and applications. Koppers Company, Inc., Wolman Preservative Department, Pittsburgh 19, Pennsylvania.

SEND FOR FREE BOOKLET!

Koppers Company, Inc.
Wolman Preservative Dept.
1303-A Koppers Building
Pittsburgh 19, Pa.

Send me a free copy of your illustrated booklet on Wolmanized lumber.

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

KOPPERS

Wolmanized®
LUMBER
CLEAN • ODORLESS • NON-CORROSIVE • PAINTABLE

ONE OF A SERIES | *how prominent architects use* **TECTUM**

a religious center of dramatic contemporary design **by Leavitt Associates**

LEAVITT ASSOCIATES achieved a unique design with the effective utilization of exposed structural materials in planning Gomley Chesed Synagogue, Portsmouth, Virginia. The bold structure places emphasis on textures, natural coloring, and functional simplicity. Multi-color panes cast a brilliant glow on the interior of the main temple, highlighting a ceiling which defies convention, leaves welded steel joists exposed.

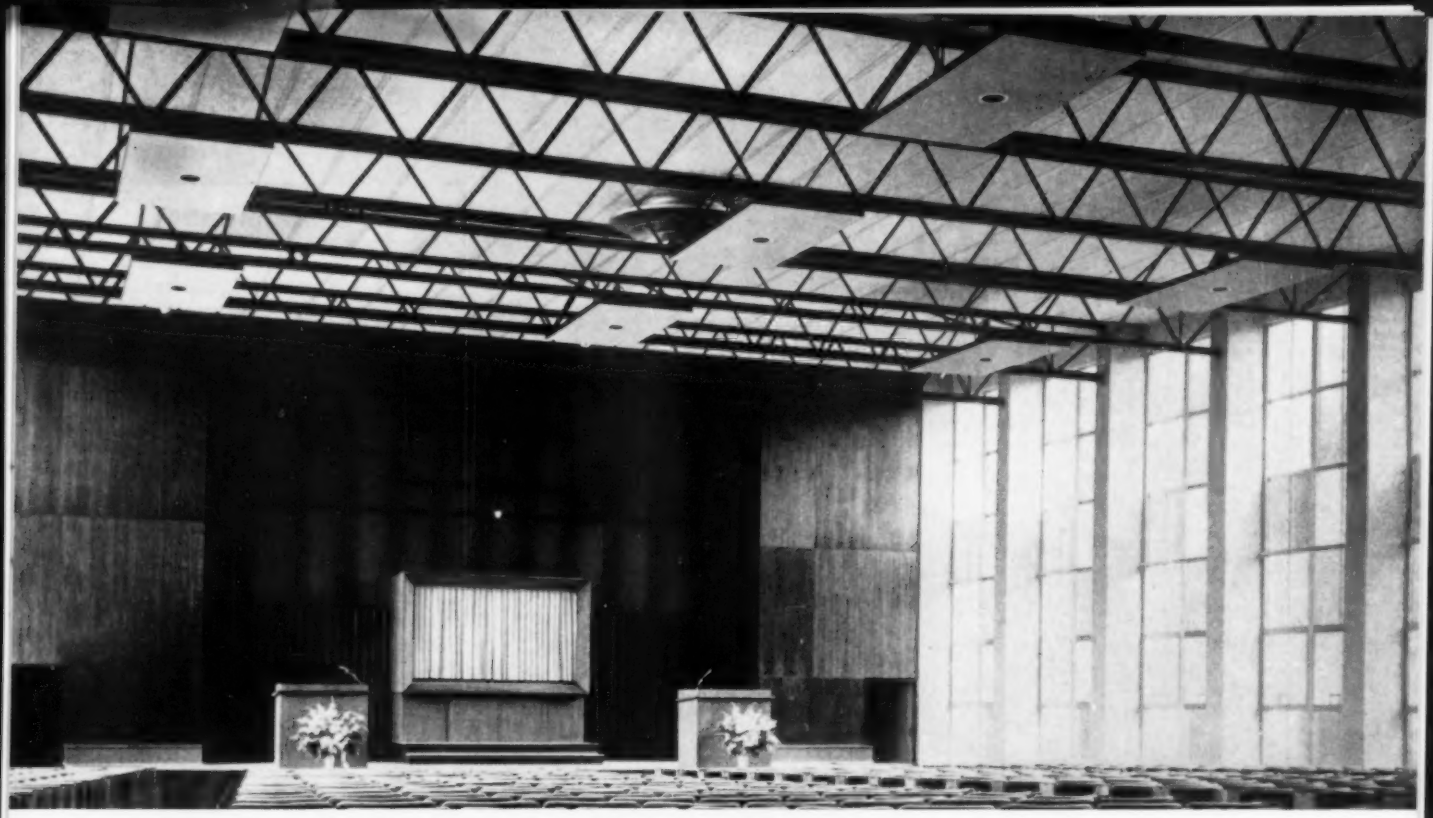
Tectum roof tile laid on bulb-tees over the joists serves as both roof deck and finished ceiling. In other sections of the building, wood framing is used in conjunction with Tectum plank. In addition to the main temple, the building includes a chapel, library, social and recreational rooms, 16 classrooms and offices.

Tectum was selected for its 3-in-1 feature: a noncombustible *roof deck* which furnishes both *thermal insulation* and *sound control*. The natural off-white color of Tectum required no painting, and its light weight permitted lighter framing.

Gomley Chesed Synagogue is another example of Tectum's versatility—another reason why architects everywhere are selecting Tectum for all types of buildings. For *your* next building project, consult your nearest Tectum distributor or Sweet's files.

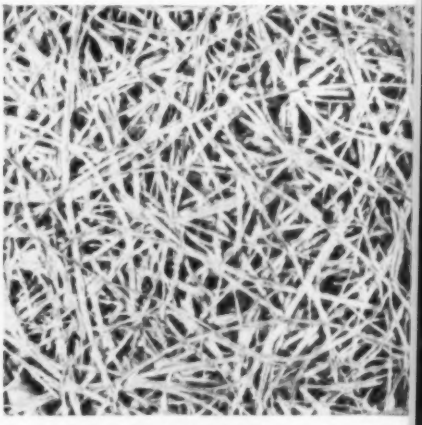
why lay a roof deck...

cover it with insulation...



Above, the main temple of Gomley Chesed Synagogue at Portsmouth, Virginia, illustrates the dramatic effect achieved through a combination of exposed steel joists and Tectum. Architect: Leavitt Associates; General Contractor: A & P Construction Company; Tectum erector: Roof Engineering Corp., all of Norfolk, Virginia. This photograph was taken before the sanctuary was completed.

Fast, easy installation of Tectum roof deck saves time and money. Furnished in 13 standard sizes and 4 thicknesses, Tectum may be fastened with nails, clips or grout to any type of framing system. Built-up roofing is applied immediately on the Tectum without preliminary dressing or curing of the roof deck.



This actual size photograph shows the unusually arresting texture of Tectum. Available also in sidewall insulation and acoustical ceiling panels.

and add acoustical material...

when you get all 3 with the

For Plants • Commercial Buildings • Institutions • Homes
Tectum Division, Peoples Research and Manufacturing Co.
General offices: 206 South 6th St., Newark, Ohio
Distributors in principal cities.

Hospital Speeds Patients' Records from Entry to Discharge

Nursing Stations

Woman's Hospital, Detroit

Station at Clinic Laboratory

Station at Business Office

Plus...

Stations At: Clinic Office • Entry • Out-Patient Department • Maintenance

with a LAMSON AIRTUBE AUTOMATIC SWITCHING SYSTEM

Lamson eliminates all inconvenience to patients caused by delay in records handling. Relieves busy personnel from message carrying. Around the clock, it automatically delivers laboratory test reports, time cards, nurses' reports, correspondence and other intra-hospital communications.

For automatic discharge at a pre-determined station, the station number is dialed by turning two bands near the carrier's top. An electrical circuit is opened between two of the metal rings on the carrier. When brushes at a station contact these rings, the circuit is closed. This actuates a switch which throws a deflector across the carrier's path . . . discharging it.

A Lamson Airtube Automatic Switching System can be installed quickly . . . with low initial and operating costs. Localized wiring saves space and expense. Eliminates wiring leading from a central location. Station controls consist of switch, power unit and deflector. The number of stations can be expanded as the need arises. For complete details, mail this coupon today.

LAMSON 75TH YEAR

Plants in Syracuse and San Francisco Offices in Principal Cities

Lamson Corporation
4543 Lamson Street, Syracuse 1, New York

Please send me a copy of "Lamson Airtube Automatic Switching System."

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE___ STATE_____

OFFICE LITERATURE

(Continued from page 306)

Lenroc Stone is described, with specific data as well as actual construction examples, in a full-color brochure. *Brochure 4C. Finger Lakes Stone Co., Inc., 903 Hanshaw Rd., Ithaca, N. Y.*

Packaged Water Tube Boilers for capacities up to 50,000 lb per hr, firing oil or gas or both, are described in a revised 12-page catalog. *Catalog 131-D. Superior Combustion Industries, Inc., 1475 Broadway, New York 36, N. Y.*

Sealing Compounds in the curtain wall design of the new RCA Cherry Hill project just outside Camden, N. J., are discussed in a case history bulletin just issued by *Presstite Engineering Co., 3798 Chouteau Ave., St. Louis, Mo.*

Fire-resistive Construction. "Fire Endurance of Open-web Steel-joist Floors with Concrete Slabs and Gypsum Ceilings" is a 17-page report resulting from a program of 18 fire tests on open-web steel-joist floors, 16 of which were protected by ceilings of gypsum-perlite plaster on gypsum lath. *BMS Report 141. 20¢. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.*

Venting. Unplasticized, rigid, polyvinyl chloride blowers for expelling corrosive air, fumes and gases are presented in 20-page *Bulletin 102* from *Industrial Plastic Fabricators Inc., Norwood, Mass.*

Stainless Fasteners. A 52-page, thumb-indexed data book includes illustrations, thread and size specifications and availability of 40 basic fastening devices and also a section on engineering data. *Allmetel Screw Products Co., Inc., 821 Stewart Ave., Garden City, N. Y.*

Wrought Aluminum Mill Products — extruded shapes, structurals, machining stock, drawn tube, forging stock, press forgings, impact extrusions, screw machine products and heavy press extrusions — are presented in an 8-page brochure from *Harvey Aluminum, 19200 S. Western Ave., Torrance, Calif.*

Insulation. Five *Foamglas* insulation case study reports applicable to the dairy food industry are bound in a spiral binder available from *Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22, Pa.*

(Continued on page 312)

How many eyes has this door opened?

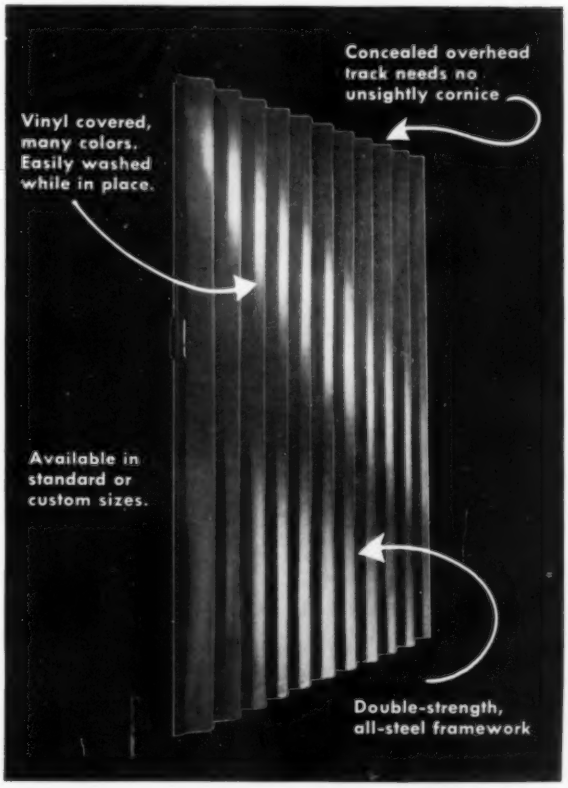
New Concepts of Design Unfold to Architects Using Space-saving MODERNFOLD DOORS

Surprising...really surprising how much a folding door can contribute to imaginative design...that door is MODERNFOLD.

Every inch becomes more active, and you are freed of needless design restrictions caused by old-fashioned hinged doors.

Foremost among manufacturers of folding doors is MODERNFOLD. Among your friends in the profession, you will be certain to find many who have used MODERNFOLD in residential, commercial and institutional installations. They will surely vouch for MODERNFOLD's beauty, utility and longevity.

Or if you want the full story, why not call your nearest MODERNFOLD distributor? You and he together will no doubt discover many unique applications for these folding doors.


Concealed overhead track needs no unsightly cornice
Vinyl covered, many colors. Easily washed while in place.
Available in standard or custom sizes.
Double-strength, all-steel framework

Superior construction features account for MODERNFOLD'S leadership.

modernfold doors have no equal

MODERNFOLD *distributors are listed under "Doors" in city classified telephone directories.*

modernfold®
DOORS

New Castle Products, Inc., Dept. C30, New Castle, Indiana

Please send me full information on MODERNFOLD Doors.

NAME _____

BUSINESS ADDRESS _____

_____

CITY _____ ZONE ____ STATE _____

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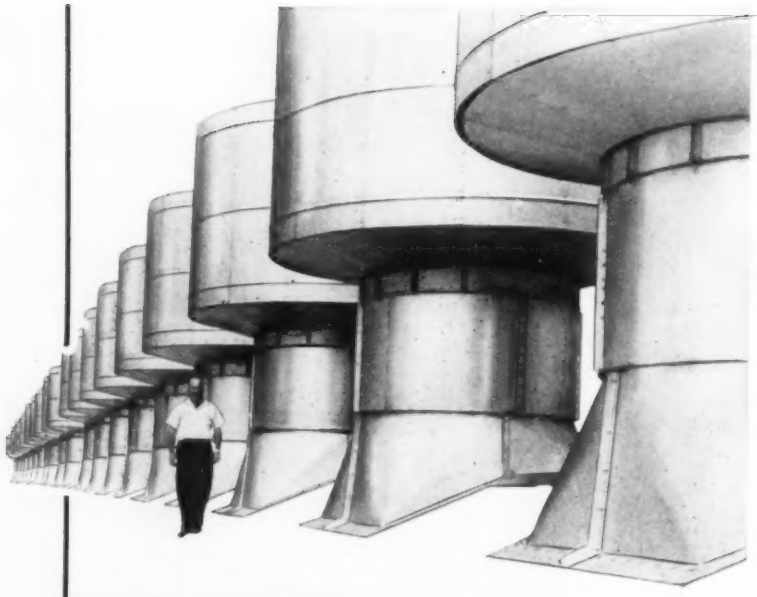
NEW CASTLE PRODUCTS, INC., New Castle, Indiana · *In Canada:* New Castle Products, Ltd., Montreal 6 · *In Germany:* New Castle Products, GMBH, Stuttgart



29 BURT FREE FLOW FAN VENTILATORS DO DOUBLE DUTY ON THIS STEEL PLANT

In this large steel plant, huge volumes of fumes and heated air must be exhausted during certain operations—lesser amounts during other production. Twenty-nine 72" Burt Free Flow Fan Ventilators with individual capacities of 81,000 CFM meet *both* needs efficiently. Burt Axial Flow cast aluminum fan wheels powered by 15 HP, 860 RPM Class B insulated motors, with shrouds and ventilating tubes, supply adequate air movement at peaks. At other times, their high wind band design provides extremely high air handling capacity as a gravity unit without the fan operating. If YOU need fresh air at low cost, let Burt engineers suggest—without obligation—the Burt Ventilators to do your task best.

Send for **FREE** *Data Book!*

Write for Burt Data Book SPV-101-E. It supplies quick data on Burt's complete line of modern Roof Ventilators.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company

48 E. South St. Akron 11, Ohio

MEMBER POWER FAN MANUFACTURERS ASSOCIATION

OFFICE LITERATURE

(Continued from page 310)

Metal Raceways. *Catalog 445* presents product information on 4x4 and 6x6 *Wireway* metal raceways for electrical distribution systems. 20 pp. *National Electric Products Corp., Pittsburgh 22.**

Perforated Metal Grilles. *Catalog 33* illustrates perforated metal grilles and gives tables of opening sizes and information on ordering and specifications. A section on ornamental designs includes actual-size illustrations. *General Catalog 62* on perforated materials is also available from *The Harrington & King Perforating Co., 5624 Fillmore St., Chicago 44, Ill.**

Industrial Roofing and Siding. The maintenance-free and corrosion-resistant properties of *V-Corr*, a corrugated porcelain-enamel-on-steel roofing and siding, are described, with engineering data and details, in a 6-page brochure from *Toledo Porcelain Enamel Products Co., 2275 Smead Ave., Toledo.*

Motel Heating. The application of *Selec-Temp* heating systems to motels, with non-electric thermostats for controlling room temperature, is described in an 8-page bulletin which outlines the advantages of combined steam and forced warm air heating. *Iron Fireman Mfg. Co., 3170 West 106th St., Cleveland 11, Ohio.**

Sealtight Products for Better Construction is the title of a brochure which contains product information, installation information, installation drawings and specifications for moisture-eliminating products in all types of construction. *W. R. Meadows, Inc., 7 Kimball St., Elgin, Ill.**

Windows, and their importance in central residential air conditioning, is the subject of a 4-page report from the *Andersen Corp., Bayport, Minn.*

Fire Protection Equipment. *In-plant Fire Trucks* and the accessory equipment for use with them are described in a 12-page booklet from *SECO Engineering & Mfg., Inc., 1300 West Fort St., Detroit 26, Mich.*

Confessionaire is a new electronic hearing aid for Catholic confessionals which is described in a 16-page brochure from *Audio Equipment Co., 805 Middle Neck Rd., Great Neck, N. Y.*

The only complete

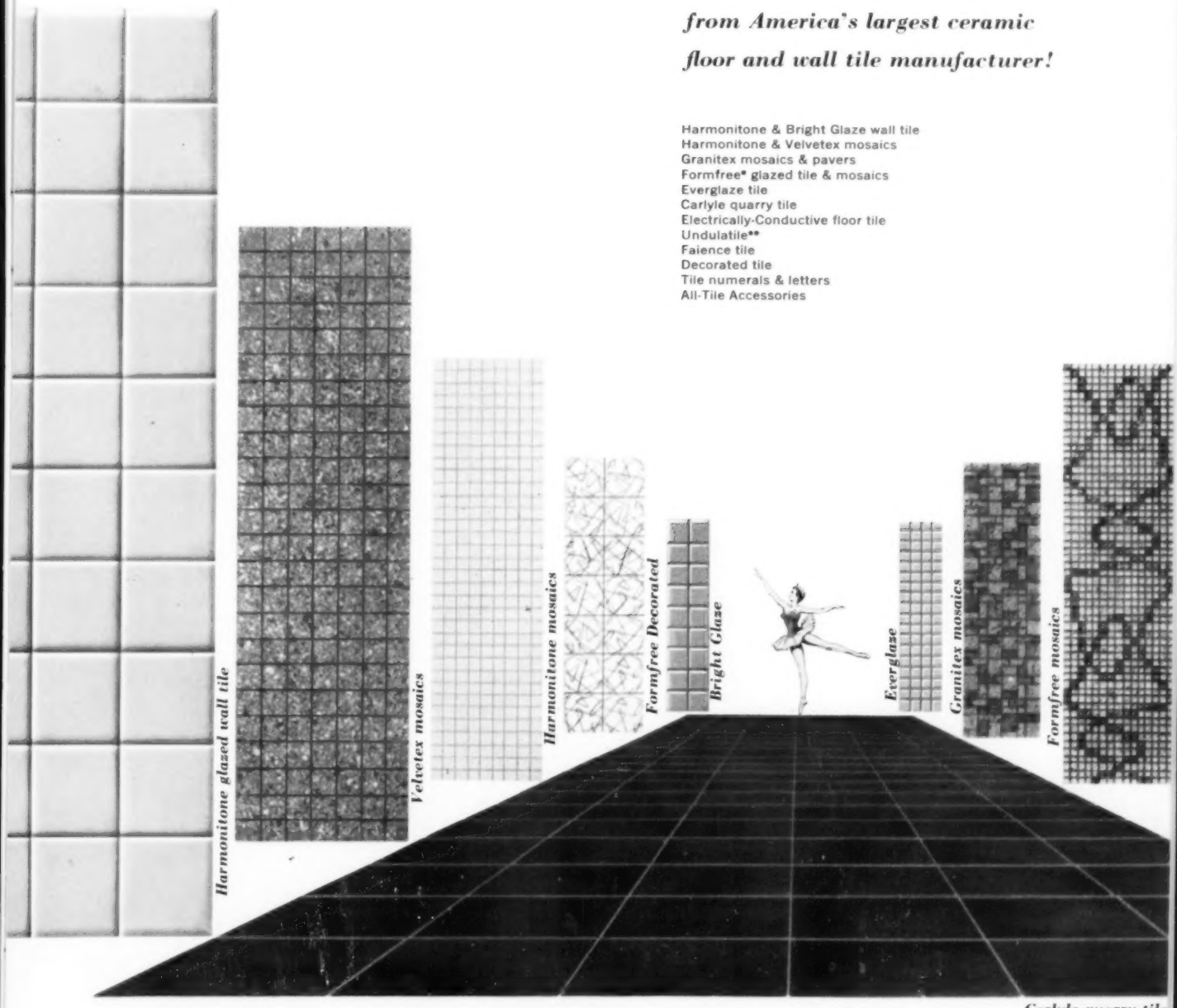
ceramic tile line . . .

MOSAIC

from America's largest ceramic

floor and wall tile manufacturer!

Harmonitone & Bright Glaze wall tile
Harmonitone & Velvetex mosaics
Granitex mosaics & pavers
Formfree* glazed tile & mosaics
Everglaze tile
Carlyle quarry tile
Electrically-Conductive floor tile
Undulatile**
Faience tile
Decorated tile
Tile numerals & letters
All-Tile Accessories



All-Tile Accessories

You'll want complete data on the complete Mosaic tile line. Ask your Mosaic Representative or write The Mosaic Tile Company, Dept. 30-32, Zanesville, Ohio, for these new Mosaic tile books: (A) The Mosaic Workbook for Architects; (B) The Mosaic Tile Book of Beautiful Homes; (C) The Mosaic Products Catalog. And, our catalog is in Sweet's.

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**Copyright 1954 by The Mosaic Tile Company

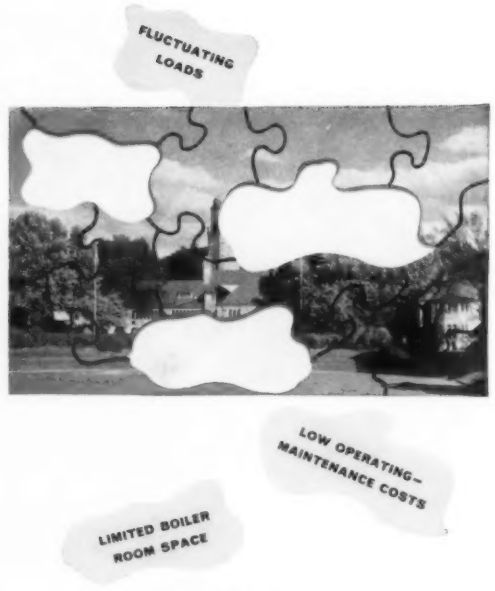
MOSAIC

Factories, Warehouses, Showrooms from Coast to Coast . . .

WAREHOUSES & SHOWROOMS: Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Detroit, Fresno, Greensboro, Hartford, Hempstead, L.I., N.Y., Hollywood, Little Rock, Miami, Minneapolis, New Orleans, North Hollywood, Philadelphia, Portland, Rosemead, Calif., Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Zanesville. SHOWROOM: New York. REPRESENTATIVES: Buffalo, Cincinnati, Kansas City, Milwaukee, Pittsburgh. FACTORIES: Zanesville & Ironton, Ohio, Matawan, N.J., Little Rock, Ark., Corona & El Segundo, Calif.

Member: Tile Council of America and The Producers' Council, Inc.

Over 5000 Tile Contractors to serve you.



HOW A JIGSAW HEATING PUZZLE WAS SOLVED

KEWANEE reserve plus rated boilers

MET SCHOOL HEATING NEEDS

A jigsaw puzzle heating problem . . . that's what it looked like at the Cranbrook School for Boys, Bloomfield Hills, Michigan, since the heating needs were so varied. But every puzzle piece fell into place when Kewanee Reserve Plus Rated Boilers were installed, because all heating needs were solved. Here's the way it worked:

Problem 1: Limited boiler room.

Solution: Two compact Kewanee Scotch Type Boilers with 50% reserve power guaranteed adequate heat under all conditions.

Problem 2: Fluctuating loads—boiler turned off nightly, turned on by stages in the morning.

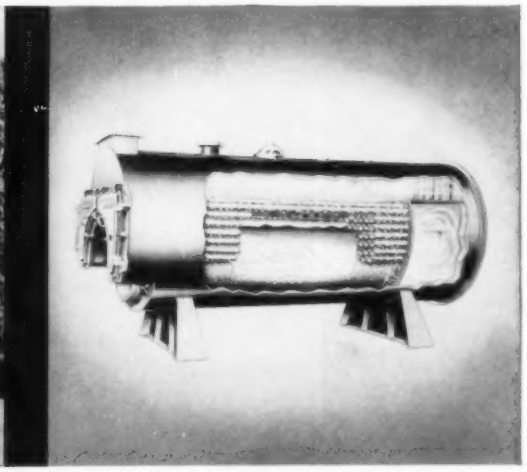
Solution: Kewanee Boilers had sufficient reserve to assure a fast, dry steam when needed to give quick heat.

Problem 3: Low operating—maintenance costs.

Solution: Since Kewanee Reserve Plus Rated Boilers certify 50% extra power built in, they operate at "cruising speed." Result—less fuel used, less wear on boiler, greater efficiency delivered.

Kewanee Reserve Plus means boilers are rated on nominal capacity, with adequate power to take care of present needs, emergencies and future expansion. Boilers rated on maximum capacity are inadequate for today's fast growing school needs. Next time select Kewanee Boilers.

Cranbrook School for Boys, Bloomfield Hills, Michigan
Heating Contractor: Laing Plumbing & Heating Company, Pontiac, Michigan
Engineer: Snyder & McLean, Detroit, Michigan



Kewanee LM-800 Series for 15 lbs. steam or 30 lbs. water installed in the Cranbrook School for Boys.

KEWANEE BOILER DIVISION
of American-Standard
101 FRANKLIN STREET, KEWANEE, ILLINOIS

KEWANEE BOILERS

You can depend on Kewanee engineering

ADJUSTO SILVER-SPOT #116-#117

TWO NEW

Silver-spot

INCANDESCENT SILVERED BOWL

DOWNLIGHTS

that actually provide

LIGHT AT THE
LOWEST COST
PER FOOTCANDLE*

Placed side-by-side with ten other downlighting devices, and tested under identical conditions the new Silver-Spot units provided light at over-all cost per footcandle from 33% to 92% less than other units tested.

This saving makes it possible to pay for Silver-Spot equipment out of operating savings.

THE BIG BONUS FEATURE

All Silver-Spot and Silver-Dot units completely eliminate glare of the incandescent filament. The exclusive Silvray Silvered bowl principle conceals the filament in an efficient mirror reflector—processed on the lamp itself. It puts light where you want it and not in the eyes of customers and employees.

ADJUSTO SILVER-SPOT—#116-#117

A recessed unit with full 360° rotation and 70° vertical swivel. Available with Coloray reflectors for red, blue or gold color effects. Completely wired.

PENDANT SILVER-SPOT—#114-#115

In gleaming, new exterior color finishes of gold, aluminum or black and two-toned combinations. Also with interchangeable colored reflectors for red, blue or golden light.

*Let us prove it!

The complete test described above is available on request. The method of test and the results are completely explained. All Silver-Spot and Silver-Dot units were included. Request this report on your letterhead or from your nearest Silvray Representative or Authorized Distributor.

SKYLIKE LIGHTING, INC.

A SILVRAY ASSOCIATED COMPANY

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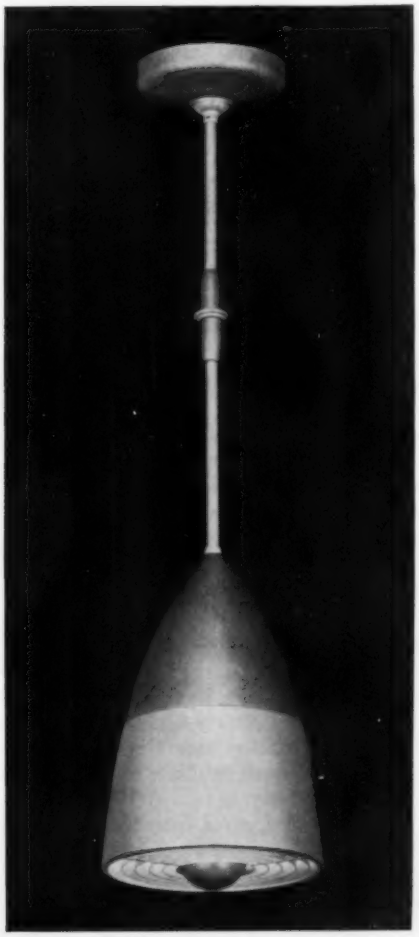
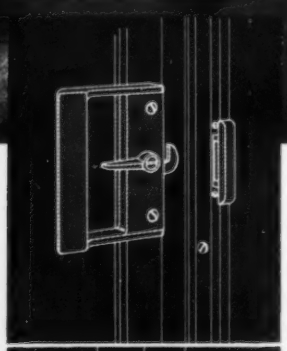
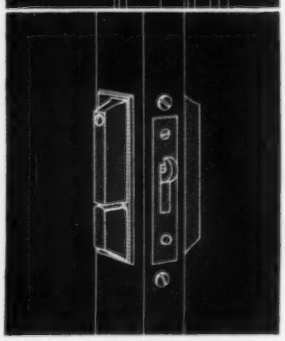


PENDANT SILVER-SPOT #114-#115

YOU'LL DECIDE FOR YOURSELF!





WHAT MAKES SUN VALLEY A BETTER ALUMINUM SLIDING GLASS DOOR

Sun Valley helps you maintain your pride of design in your completed project by furnishing the finest structural design and quality in aluminum sliding doors. Constructed of rugged extruded aluminum ... yet slim and trim to provide attractive functional styling. Sun Valley doors use a greater expanse of glass, creating the new "Outward Vision"... making the outdoors an immediate living part of the indoors.

Doors glide silently, effortlessly on sealed ball bearings. Complete weatherstripping with continuous strips of mohair and extruded neoprene assure positive weather control.

Three models, Sun Valley Sr., for deluxe installations, the Jr., for low budget and multiple housing installations, and the new Imperial for all-weather double glazing, give full coverage in price range and sizes. Ease of installation saves time and cuts construction costs.

Sun Valley's nationwide distributor organization assures availability in your area when you designate Sun Valley.

Before you select a sliding door, study Sun Valley... see what makes this a better door and the door to specify.

You'll find Sun Valley sliding doors (A.I.A. File No. 16E) listed under section 16d/Su in the 1956 SWEET'S catalog or write Dept. 205 for complete information and detailed drawings for your files. Complete line of aluminum sliding windows and jalousies also available.

SUN VALLEY INDUSTRIES, INC.
8354 SAN FERNANDO ROAD, SUN VALLEY, CALIF.

THE RECORD REPORTS

(Continued from page 16)

future colleagues, but we believe that this quality, peculiar to each one, should be allowed to develop naturally. No one becomes a genius by following a fixed program. And when one has no creative gift, it is safer to look for inspiration in works already achieved, and in other people's good ideas, than to insist on forgetting that architecture is a utilitarian art, closely linked to a social and economic program. Therefore, architecture cannot merely be considered a plastic problem, solved, once the esthetic point of view of the individual has been satisfied."

Mr. Moreira noted that the competition entries showed "certain general tendencies" and "certain equally common deficiencies" among "schools so far different both in geography and culture." The jury saw with approval a universal "awareness of the social function of architecture," but regretted that this did not always "correspond to a perfect understanding of this fundamental question." Among the deficiencies, Mr. Moreira listed "incapacity to overcome, or at least to compensate for, defects caused to human existence by present-day socio-economic reality" — observing that in their solutions of the competition problem some students appeared "obsessed with the idea of reproducing, in holiday surroundings, the poor lighting, ventilation and lack of tranquility and comfort of the big cities." At the other extreme, said Mr. Moreira: "Those who, in an attempt to follow local traditions, make use of obsolete elements from the past, elements in any case quite unsuited to modern conditions, to solve a modern problem." And finally: "This serious error may only be paralleled in the freedom with which certain forms are suggested and developed in a strange manner, based on no other reason than the arbitrary judgment of their inventors."

On the subject of the premiated entries, the jury called the Havana project "a concise and correct solution of the problem" and commended the presentation itself as "first class — both clearly and beautifully set out." The Japanese entry was called "a plan which, both taken as a whole and in its details, in its forms, constructions, in its urbanization and architecture, is coherent, legitimate and beautiful"; the link to tradition, without "neos" or "isms," was also commended."

NEO-RAY LOUVRED CEILINGS

SOLVE ANOTHER SCHOOL LIGHTING PROBLEM*

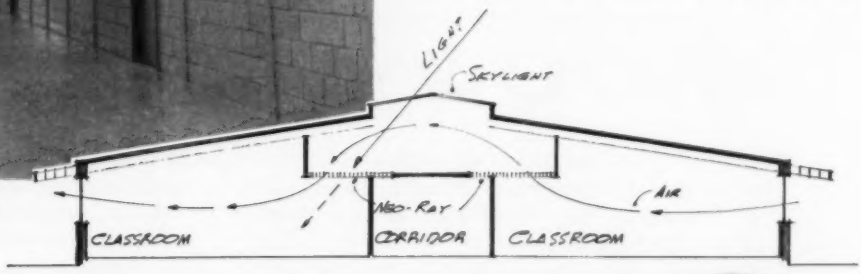
JAMES BOWIE JR. HIGH SCHOOL
AMARILLO, TEXAS

Architect:
ROBERT E. HUCKER
Amarillo, Texas

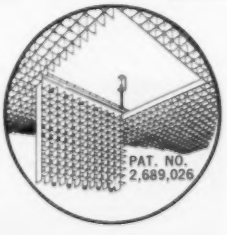
Gen. Contractor:
C. S. LAMBIE
Amarillo, Texas

*The Neo-Ray louvers were chosen as a light control device, and enable us to introduce light into our building, at the same time controlling glare and prohibiting direct sun rays. I'm sure you realize that the louvers (actually an egg crate) were used below a skylight, permitting bi-lateral lighting of classrooms in a double-loaded corridor situation, as shown in the accompanying cross section sketch.

As an additional advantage, we are able to gain cross-ventilation through the building. The Neo-Ray louvers have proved most satisfactory. Custom made for our condition, they fit well, are neat and very nicely finished, were inexpensive, and, as anticipated, they do a perfect job of light control in our building.



SPECIAL LOUVRE DESIGNS?
Let the "know-how" of our engineering department assist you. No obligation, of course.



Send for NEW LOUVRED CEILING catalog No. 544
See our catalog in Sweet's Architectural File for 1956 sec. 31a
NE

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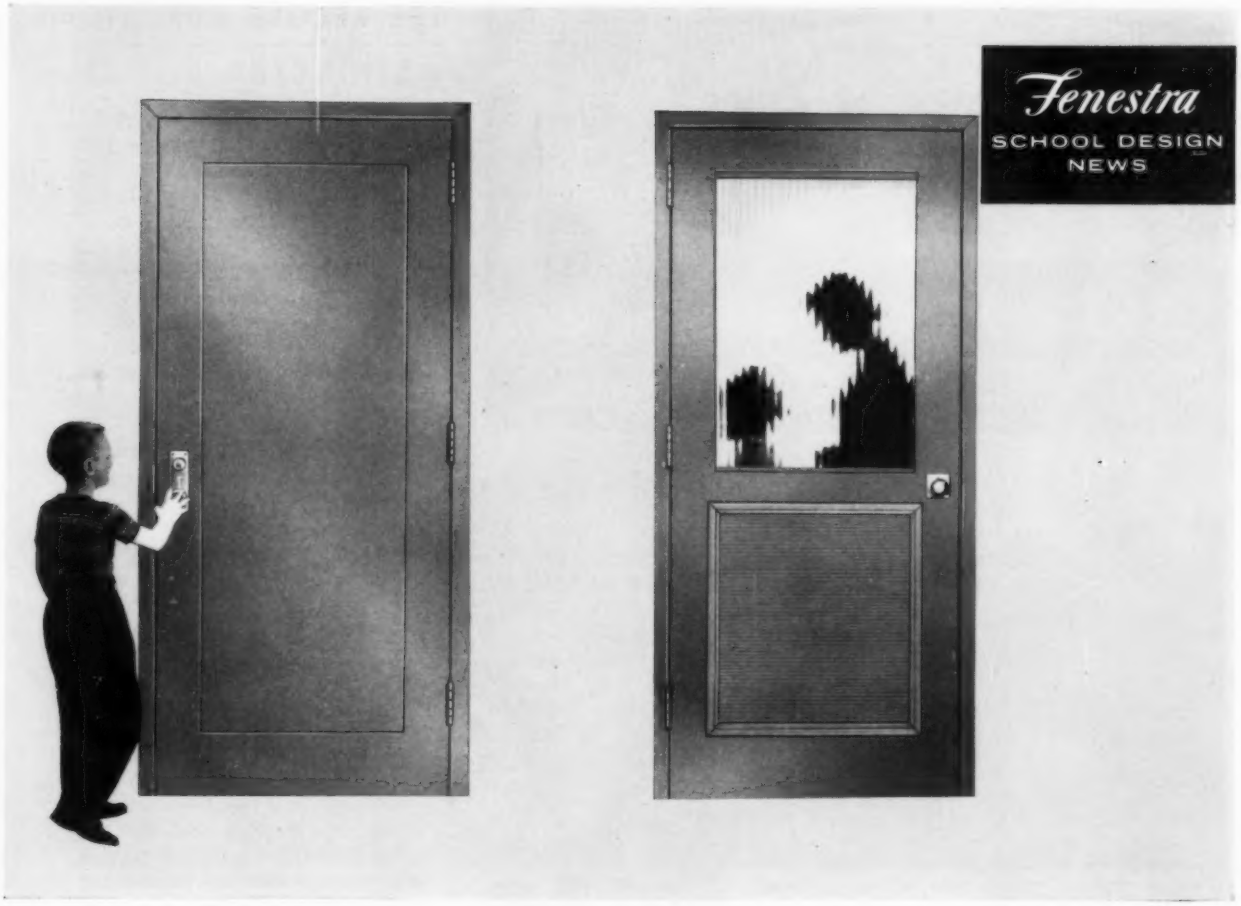
Fenestra packages hollow metal door, frame
and hardware units to save you up to $100
per opening with this . . .

NEW IDEA

Look like costly custom-made doors, don't they? They're not. They're stock doors by Fenestra®—with an installed cost about $100 *less* per opening than you'd expect to pay!

Fenestra's new idea for saving you money on school doors is really very simple. We mass produce them on special jigs that save us expensive labor. We pass along this savings to you. We maintain large stocks of standard sizes to give you fast delivery and doors come to your building complete with frames and hardware, ready to install. You don't have to cut, fit, mortise, drill or tap a Fenestra Door. *One*

REIDLAND SCHOOL, Paducah (Reidland), Ky., cost less to build because 134 Fenestra 1¾" Hollow Metal Flush Doors were used. *Architect:* G. Tandy & Lee Potter Smith, Paducah, Ky. *Contractor:* Erhart-Knopf Construction Co., Inc., Louisville, Ky.



FOR SCHOOL DOORS

man with a *screw driver* can install it *in minutes.*

Fenestra Hollow Metal Doors swing open smoothly. They close quietly because there's a sound-deadening material inside. You save, year after year, on maintenance because Fenestra Doors can't warp, swell, stick or splinter. They last a lifetime!

Illustrated are Fenestra's 1¾" Entrance Doors, 1¾" Flush Door and the NEW 1¾" *Fen-Air* Louvered Door for air-conditioned buildings—three of the many fine doors in Fenestra's complete line. Call your Fenestra representative for detailed information or mail the coupon below.

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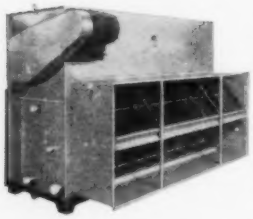
THE INDUSTRY'S MOST COMPLETE LINE

'AH' AIR HANDLING UNITS



Available in 12 models from 800 CFM to 28,800 CFM. Floor-standing vertical and ceiling-hung horizontal models with direct expansion, water or steam coils. Face and by-pass damper sections, mixing boxes, spray type humidifiers and filter sections available for all units. Models AH-10 through AH-32 available with *Inner-Fin* coils.

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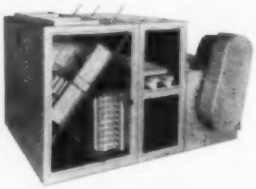
Available in 9 sizes covering a range from 2,560 CFM to 28,800 CFM, Multizone Units parallel the standard Bush HAH Air Handling units, using the same proven blower sections and accessories such as filter sections and mixing boxes. Zone dividers may be arranged as desired — vertical, horizontal or a combination of both. Entire interior is well insulated and undercoated. Units can be shipped sectionally when this is desired to facilitate installation.



'CR' REMOTE AIR CONDITIONING UNITS

Provide quiet, economical year 'round air conditioning for all types of multi-room buildings. Units are available in vertical floor and horizontal ceiling models . . . feature individual room control . . . are easily incorporated in new or existing buildings.

Request Catalogs containing complete specifications on units shown.

BUSH

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WEST HARTFORD 10, CONNECTICUT • RIVERSIDE, CALIFORNIA

THE RECORD REPORTS

WASHINGTON REPORT

(Continued from page 32)

ties. The cost would run between $14 billion and $16 billion for the five years. Average annual rate of construction for the next few years is expected to be 94,000 classrooms.

Roger W. Fulling, Director of construction, Office of Assistant Secretary of Defense, Properties and Installations, Department of Defense — Overall objectives are to assist in programming and coordination; no "dictation" to services. Mr. Fulling feels there should be more effort to build quality into construction, says there is a responsibility on the whole industry to reduce cost since public money is involved. More work is needed in the pre-planning stage — site investigations, borings, etc. — so work can move more quickly when it starts. There is now not enough attention to selecting and handling of materials. Projectwise, 95 per cent of the services' $2 billion construction program is let on competitive bids. Dollarwise, the figure is 85 per cent. Capehart military housing program goal is 100,000 units under construction this fiscal year; there were 44,000 unit applications on hand, 33,000 of them approved. Defense is laying out an "emergency" construction program but hopes the plans will never have to be used. Much prefabrication has been introduced in the whole program. Mr. Fulling hopes architects will be helpful in the continuing program of new definitives and standards. He explained that confidential curves govern architectural fee decisions, with the work spread out as far as possible. Firm selection is on basis of negotiation in order of preference after thorough review of known qualifications. Any firm interested can file qualifications with Defense field offices. Mr. Fulling's staff is not satisfied with progress in design; claims it takes too long. Present average is nine to 12 months per project.

Herbert H. Howell, director, Office of Airports, Civil Aeronautics Administration — Technical advances are creating a need for improved landing facilities and terminals. Local communities are initiating new programs, aided under a Federal assistance program since 1946. The 1955 Act provided a four-year extension and $95 million is being put into projects this year. Criteria for alloting Federal aid — (1) safety of project; (2) efficiency; and (3) convenience. Problems: noise of modern aircraft; re-

(Continued on page 324)

Polyken® protective coating beats corrosion in this sulphuric acid plant

They're using durable Polyken Tape *to protect electrical conduit in and around the cooling tower*

The Switch Box and Controller Station you see here is located at the cooling tower of Gulf Oil's Port Arthur, Texas, sulphuric acid plant. As you know, where there's sulphuric acid, there's a big need for protection against corrosion.

Formerly, they used paint on the electrical conduit. That lasted only three or four months.

But *Polyken* Protective Coating has kept the conduit in excellent condition since 1953. The tape itself is in excellent condition, too.

Polyken Tape gives dependable protection because it's manufactured from controlled raw materials under controlled conditions. Its tough polyethylene backing offers high electrical insulation resistance, high resistance to corrosive action.

Just as important, *Polyken* Protective Tape Coatings go on right from the roll. The thick adhesive mass provides strong adhesion to cylindrical surfaces and a self-seal at the lap. That means faster, more effective, lower-cost application—when it's put on and in the long run. Send the coupon or see catalog in Sweets Industrial File, Sec. 6c/Ke.

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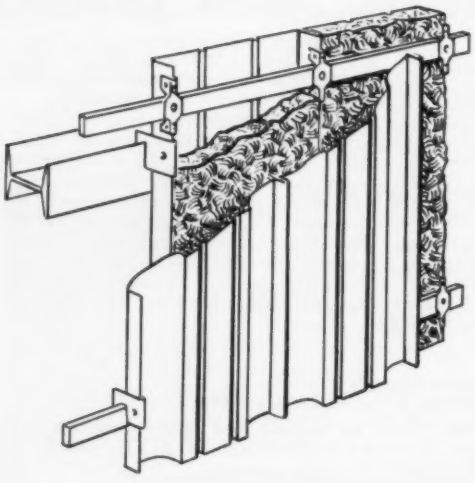
For rapid construction specify NEW

The addition of new curtain walls to the Stran-Steel architectural line enables you to combine structural soundness with a fresh, attractive appearance.

Exclusive *Stran-Satin* finish, developed by National Steel especially for the new Stran-Steel curtain wall, combines satin-smooth finish free of spangled patterns with the extra protection of a non-corrosive zinc coating. *Stran-Satin* panels give you the low cost and extra strength of steel plus the eye appeal of far more expensive materials.

Stran-Steel curtain wall panel offers these advantages . . .



Light framework—Because of the light weight per square foot, steel framework can also be lighter in weight—a significant cost-cutting factor.

Fast, easy to assemble—Panels are tailored to fit individual design. Sections of 18-gauge steel (or lighter), available in lengths up to 52 ft., can be assembled entirely without screws, bolts or welding. Thus a building can be enclosed as soon as framework is erected . . . and interior finishing and equipment installation can begin before exterior is complete.

Less heat loss—Offset construction cuts metal-to-metal contact, offers minimum conductivity.

Complete wall insulation—Sections are designed for 1½-in. batt-type insulation. With a "U" factor of 0.14, this panel has the insulating efficiency of a conventional 16″ masonry wall.

Attractive appearance—Vertical grooves create clean, pleasing appearance, increase rigidity, and provide for expansion and contraction. The *Stran-Satin* finish combines proven corrosion resistance with a highly decorative appearance.

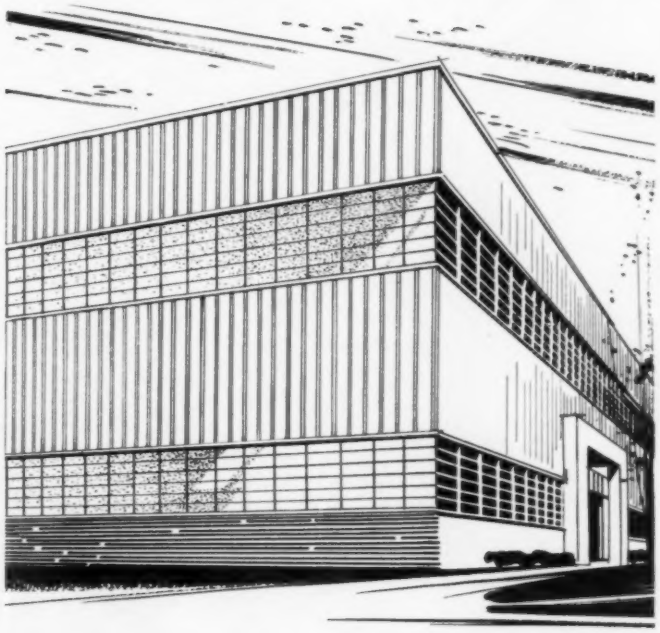
EXTERIOR SHEET

INTERIOR SHEET

COMPLETE CURTAIN WALL

plus eye appeal . . .

STRAN-STEEL CURTAIN WALL



The curtain wall offers a modern method of wall or fascia construction that is equally well suited for industrial, commercial, recreational, hospital or other public buildings.

Stran-Steel now offers a complete structural system with fully integrated components—joists, studs, channels, columns, beams, galvanized or painted ribbed decking, and the new curtain wall panels. This complete system is designed for durable, fire-safe, industrial buildings, schools, institutions, apartments, and shopping centers.

New Stran-Steel 10″ and 12″ nailable steel joists span wider distances

Cost-saving nailing groove cuts material and labor expenses.

Available in 14-, 13-, 12-gauge cold rolled sheet.

Flange widths:
10″ joist: 2″, 2½″, 2¾″, 3″
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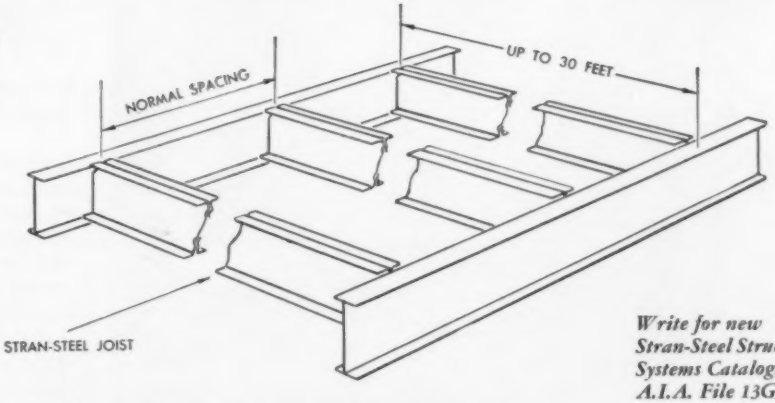
Lengths:
11 to 30 feet.



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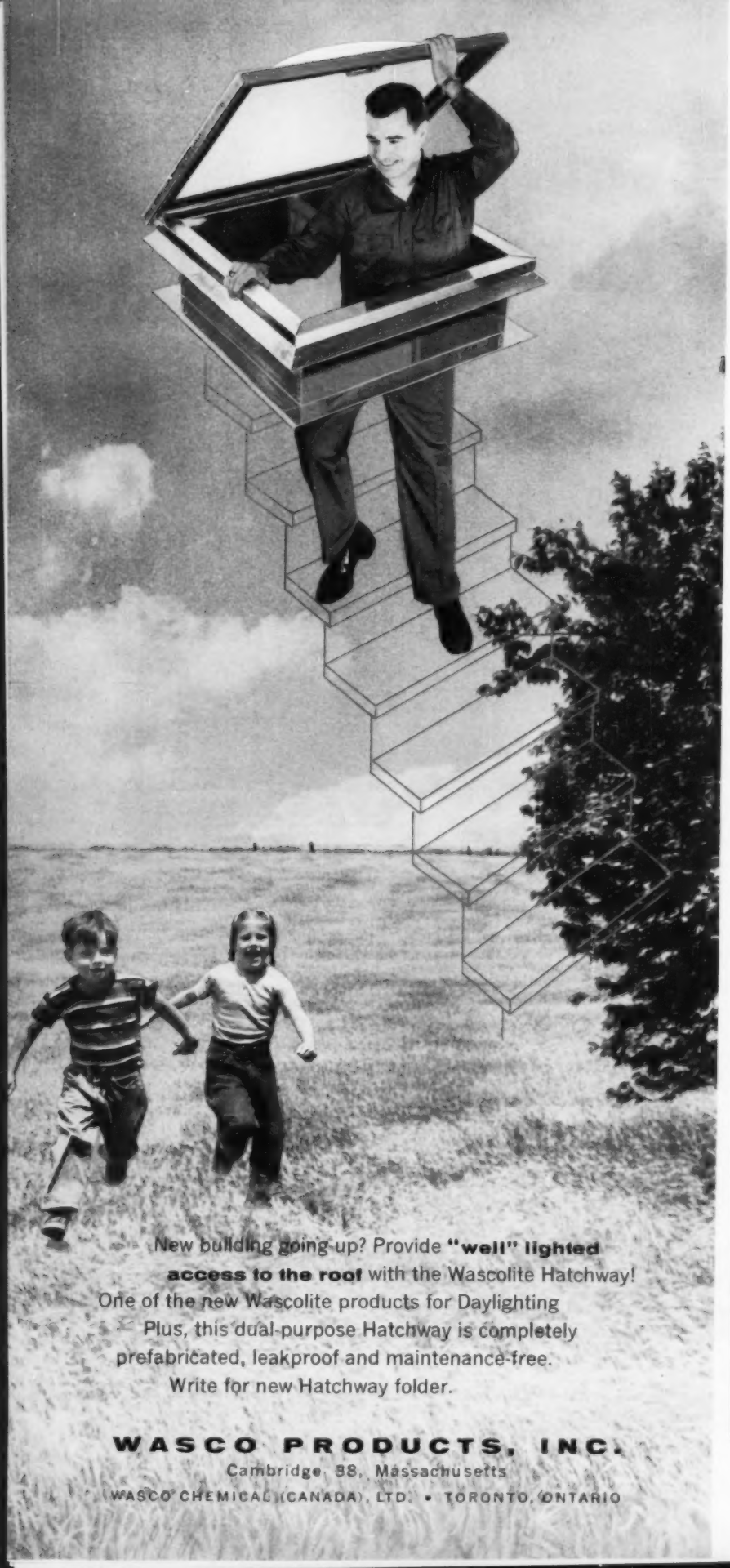
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One of the new Wascolite products for Daylighting
Plus, this dual-purpose Hatchway is completely prefabricated, leakproof and maintenance-free.
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THE RECORD REPORTS

WASHINGTON REPORT

(Continued from page 320)

search going forward. And during fiscal 1956 estimated "commercial embarkations" will be double those of 1955.

Joseph Barnett, assistant deputy commissioner, Bureau of Public Roads, Department of Commerce — Explained formulas for alloting Federal aid for highways and arterial routes. The arterial systems were described as the backbone of city planning.

Leonard L. Hunter, supervising architect, Design and Construction Division, Public Buildings Service, General Services Administration — All design work in the lease-purchase program is being given to private architect-engineer firms. Ability to take job, experience and location guides PBS in selecting. The selected firm comes to Washington, project is discussed, estimated cost reviewed. Fee is offered on the basis of a variable curve established after years of agency experience. Complexity of the building is a factor.

August Hoenack, chief, Technical Service Branch, Division of Health and Medical Facilities, Public Health Service, HEW — Hill-Burton hospital construction is based on local initiative. The private sponsor selects the A-E with normal supervisory duties included in the contract. Some 750 architects are involved in the program, many without previous experience in hospital work. The HEW division has to start educating the sponsor and the architect in the details of the program with the start of each new job. Its representatives sit in early conferences with the sponsor and A-E.

At later sessions the Defense Department representatives said in answer to questions that they were using standard plans for hospitals but did not agree with the full stock plan principle. The technical division is now at work on new standards for definitive drawings — not stock designs, it was emphasized. An Air Force spokesman said the Air Force doesn't want standard drawings, that "definitives are as satisfactory as anything."

In all, 40 organizations were listed as participants in this public works conference. It was the intention of the A.I.A., A.S.C.E. and the U. S. Chamber to bring all segments of the construction industry into the meetings, and it was hoped that no interested organization had been inadvertently omitted.

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SOLVE 2 PROBLEMS

1 SPACE

Now your scope of design can include the finest air conditioning without using a foot of vital floor space. Because new G-E Packaged Air Conditioners are fastened to the ceiling—or can be mounted on a shelf. And these trim units enhance any modern scheme. They're compact, self-contained—with no exterior parts. Motor, compressor and condenser are all sealed inside.

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Where water restrictions present a serious problem, specify G-E ceiling-mounted units in air-cooled models available in 3 and 5 ton capacities. These models use no water—require only air and electricity. Water-cooled models also available in 3, 5 and 7½ ton capacities. For *year-round* comfort, all new G-E ceiling-mounted units may be equipped with coils for winter heating.

And, remember! G-E is the only complete packaged air conditioning line on the market. You can specify both floor- and ceiling-mounted models from a single manufacturer. For free booklet, "What Every Businessman Should Know About Weather Reflex", write General Electric Company, Commercial and Industrial Air Conditioning Department, Bloomfield, New Jersey.

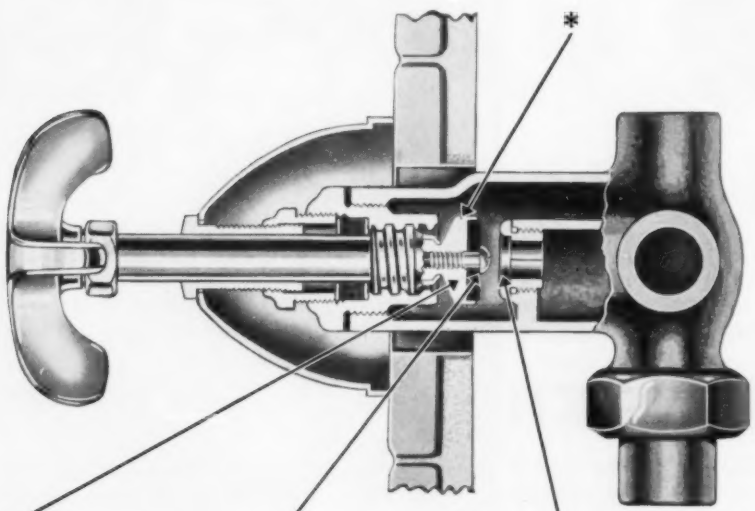
Packaged AIR CONDITIONERS

Progress Is Our Most Important Product

GENERAL ELECTRIC

NO COMPLETE SPEAKMAN PLUMBING FIXTURE HAS EVER BEEN REPLACED

HERE'S WHY . . . COMMANDER Hi-Seat Valves are designed and manufactured for trouble-free performance and longest possible wear. Durable, non-corrosive Monel is used wherever internal wear is greatest. This is why architects, engineers, plumbing contractors and owners have learned to count on the COMMANDER Line for extra-long wear and life-time dependability. In 23 years not one complete COMMANDER Line fixture fitting has been replaced because it wore out.



* ***Monel Swivel Disc***—Speakman swivel construction decreases the wear on washer and valve seat to a minimum . . . the instant the washer seats, it stops rotating. Washer and seat life are more than doubled.

* Identified by the Grooved Line.

Monel Washer-Retaining Screw—Any plumbing contractor will tell you of the trouble and inconvenience caused by the corrosion of ordinary washer retaining screws which break off at the time of re-washering. The COMMANDER *Monel* Screw never corrodes—may be removed easily—no need for costly, time-consuming labor.

Monel Renewable Valve Seat Note design which raises valve seat to give unrestricted waterway and provides full water supply when valve is open. The valve seat, one of the most vulnerable wearing parts, is machined of heavy, durable, non-corrosive *Monel* for all COMMANDER Valves.

COMMANDER FITTING BECAUSE IT WORE OUT

S-4001 SPEAKMAN COMMANDER

Pop-Up Lavatory Combination with "Sprisg-Flo" Aerator. Code type nozzle. Valves equipped with *Monel* renewable seats, *Monel* swivel discs (with encased washers) and *Monel* washer screws. Pop-up drain.

S-3080 SPEAKMAN

Sentinel Built-in Shower and Commander Bath Fitting Combination. Sentinel Balanced Pressure Mixing Valve. S-2250 Model 1 Anystream Shower Head with integral ball joint, concealed volume control, bent shower arm and wall flange. Commander Hi-Seat bypass valves with unions, *Monel* renewable seats, *Monel* swivel discs, encased washers and *Monel* washer screws. Over-rim nozzle. Act-Easy Pop-Up Bath Drain.

THE OPERATING perfection of the COMMANDER Hi-Seat Valve has made the COMMANDER Line the world's finest line of shower and plumbing fixture fittings. Superior internal engineering features like the exclusive Monel Swivel Disc, the Monel Washer Retaining Screw, the Monel Renewable Valve Seat are standard equipment in every COMMANDER Hi-Seat Valve—three good reasons why the Speakman Company has never been called on to replace any complete shower or fixture fitting in the COMMANDER Line because it wore out.

Write today for the new general catalog S-11. Learn for yourself why for the past 23 years, Speakman COMMANDER Showers and Plumbing Fixture Fittings have been specified wherever beauty *plus* lifetime dependability and minimum maintenance costs were the deciding factors.

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THE RECORD REPORTS

ON THE CALENDAR

March

7–8 Third Annual Architects' Conference: Office Practice — University of Kansas, Lawrence

8–9 Annual Joint Conference on Church Architecture, sponsored by Church Architectural Guild of America and Bureau of Church Building, National Council of Churches of Christ in the U. S. A. — Hotel Biltmore, Atlanta

12–16 Twelfth Annual Conference, National Association of Corrosion Engineers — Hotel Statler, New York City

12–30 The 59th Gold Medal Exhibition of Architecture and Allied Arts — Architectural League of New York, 115 E. 40th St., New York

14–16 The 42nd annual convention, Michigan Society of Architects — Hotel Statler, Detroit

18–21 Spring Meeting, American Society of Mechanical Engineers — Multnomah Hotel, Portland, Ore.

21–23 The 18th annual American Power Conference, sponsored by Illinois Institute of Technology in cooperation with 13 universities and nine national and regional technical societies — Hotel Sherman, Chicago

April

1 Annual Conference, Child Study Association of America — Hotel Sheraton-Astor, New York City

6–7 Meeting of the Executive Committee of the American Institute of Architects' Board of Directors — Hotel Biltmore, Los Angeles

9–10 A Conference on Urban Design and the Role of Planners, Architects and Landscape Architects in the design and development of cities; lectures, seminars, exhibition and discussions — Harvard University, Cambridge, Mass.

11–13 National Housing Conference — Hotel Statler, Washington, D. C.

12–14 South Atlantic Regional Conference, American Institute of Architects — Washington Duke Hotel, Durham, N. C.

13–20 Texas Architects Week; theme, "50 Years of Architectural Education in Texas"

16ff Exhibition of stained glass: Christopher Scadron, stained glass de-

(Continued on page 330)

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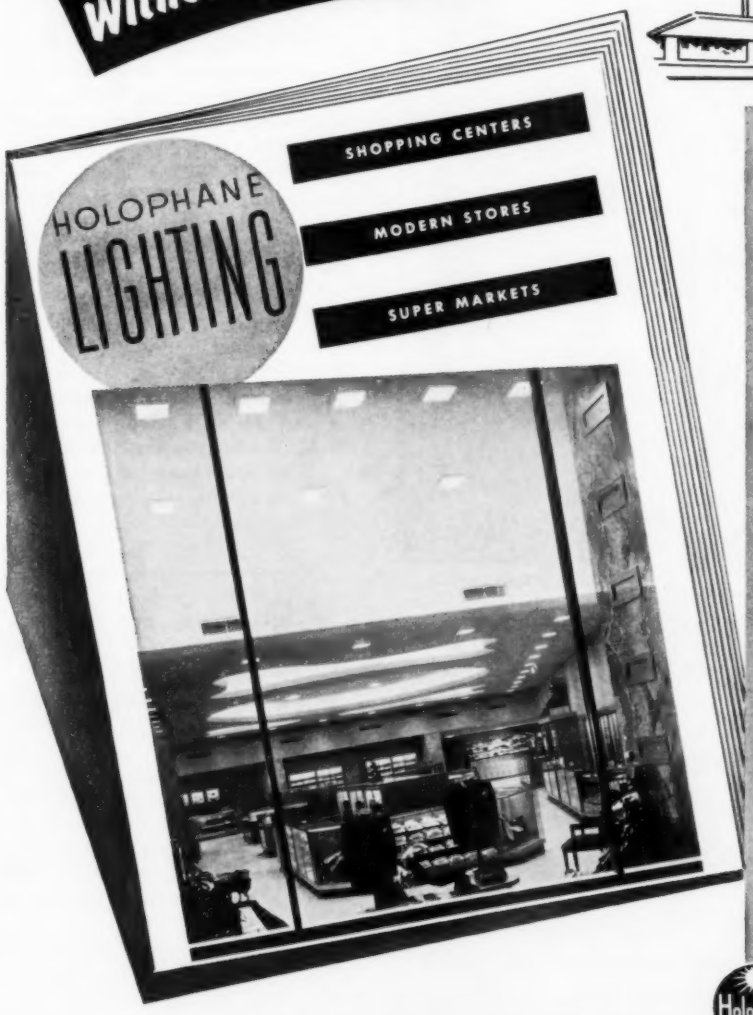

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THE RECORD REPORTS

(Continued from page 328)

signer, and Michael Savoya, architectural designer; until May 16 — Architectural League, 115 E. 40th St., New York City

20 First Annual Midwest Architectural and Engineering Institute, co-sponsored by the University of Kansas Architectural and Engineering School and the Kansas City Chapter of the Producers' Council — Union Building, University of Kansas, Lawrence, Kan.

23–25 The 25th Anniversary Conference, American Institute of Decorators — Sheraton Palace Hotel, San Francisco

23ff Part II, British Industries Fair (including building products); until May 4 — Birmingham, England

26–27 National meeting, American Institute of Electrical Engineers — Bradford Hotel, Boston

26–28 Middle Atlantic Regional Conference, American Institute of Architects — Dupont Hotel, Wilmington, Del.

May

4 Annual Conference of Engineers, sponsored by the College of Engineering — Ohio Union, Ohio State University, Columbus

5 Annual meeting, Indiana Society of Architects — Marott Hotel, Indianapolis

7–9 Annual meeting, American Institute of Planners — Hotel Sheraton-Biltmore, Providence, R. I.

7–9 Annual Meeting, Air Conditioning and Refrigeration Institute — The Homestead, Hot Springs, Va.

11–12 The 76th Annual Convention, Michigan Engineering Society — Pantlind Hotel, Grand Rapids

12 Pre-Convention meeting of the Board of Directors, American Institute of Architects — Hotel Biltmore, Los Angeles

12–20 "Showcase for Better Living"; 1956 Home Building Exposition — The Coliseum, New York City

14–17 Design Engineering Show — Convention Hall, Philadelphia

15–18 The 88th Annual Convention, The American Institute of Architects — Hotel Biltmore, Los Angeles

(Continued on page 334)

in the wake of a junior tornado!

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7. COLUMNS — Steel columns, Reinforced concrete columns, Wood columns, Cast-iron columns, Composite or combination columns, Column base plates
8. FOUNDATIONS AND WALLS — Foundations — general, Masonry walls and piers, Retaining walls
9. CONNECTIONS — Riveting and bolting (steel), Welding, Timber joints, Concrete connections
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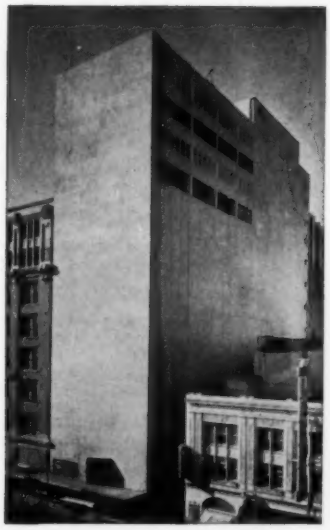
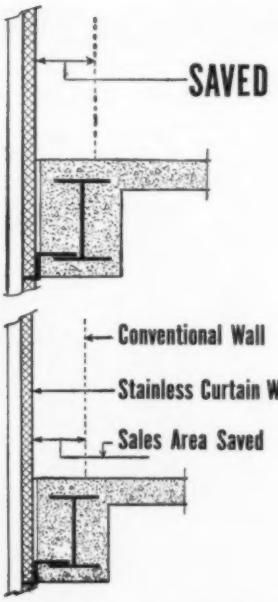


Architect:

Lorenz and Williams,

Dayton, Ohio



Stainless curtain walls save 1,500 sq. ft. for Rike's department store sales-display area

By using stainless steel curtain walls instead of masonry for its new 12-story addition, Rike-Kumler Company, Dayton, Ohio department store, is gaining an extra 1500 sq. ft. of sales-making floor area.

Located in downtown Dayton, the store is making every foot of space count. The thin curtain walls (only 4½ inches thick compared with conventional 12-inch-plus walls) save about 8 inches of usable space along each wall. They give the store the equivalent of part of an additional floor.

Fast, easy erection of the stainless steel panels is giving the department store an added dividend, too. Rike's expect to serve customers in the new building about 3 months sooner than would have been possible with masonry construction.

Besides saving time and space, stainless curtain walls give the building an attractive tone of modern simplicity which reflects the store's position of progressive leadership in the community.

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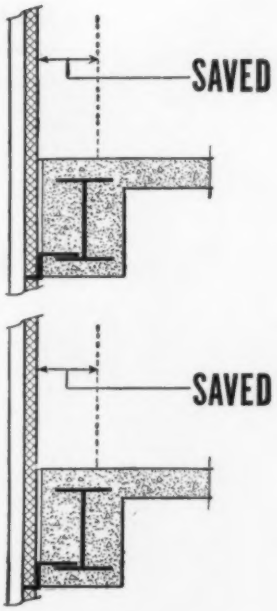

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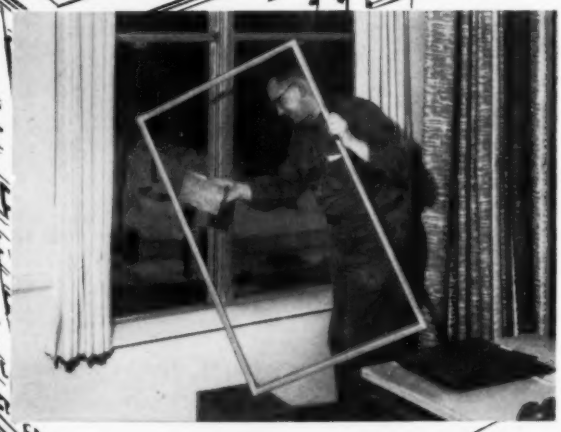

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THE RECORD REPORTS

(Continued from page 330)

16–18 Second Annual Convention, Prestressed Concrete Institute — Hollywood Beach Hotel, Hollywood, Fla.

21–22 Fifth Annual Meeting, Building Research Institute — Sheraton-Brock Hotel, Niagara Falls, Ont.

30ff The 1956 British Architects' Conference; until June 2 — Norwich, England

OFFICE NOTES

Offices Opened

• Fred S. Dubin Associates, Consulting Engineers, have opened an office at 45½ Mt. Auburn St., Cambridge, Mass. Engineer Peter S. Myers is the associate in charge.

• Hansen, Holley, and Biggs, Consulting Engineers, is a new firm composed of Robert J. Hansen, Myle J. Holley Jr. and John M. Biggs. The address is Box 431, Cambridge 39, Mass.

• J. Larry Poole, Architect, recently opened offices at 214 Commerce St., Kingsport, Tenn.

Firm Changes

• Bellante and Clauss, Architects and Engineers, is the new name for the former firms of Gilboy and O'Malley and Gilboy, Bellante and Clauss, it has been announced by firm members E. Lawrence Bellante, Alfred Clauss, Joseph H. Young, J. Richard Shultz and Walter J. Miller Jr. The firm has offices in the Mears Building, Scranton, Pa.; Rittenhouse-Savoy, Philadelphia; Franklin Building, Norfolk, Va.; and 114 W. State St., Trenton, N. J.

• Cellar & Warner, a partnership recently formed by A. Eugene Cellar, A.I.A., and Robert A. Warner, A.I.A., has offices at 502 Riverside Ave., Jacksonville, Fla.

• Coleman & Coleman, Architects, of Landisville, Pa., announce that Sherwood F. Ritz Jr. has become a member of the firm.

• Ferguson, Stevens & Associates, Architects & Engineers, have appointed Robert G. Mallory and George C. Pearl Associate Architects in the firm.

(Continued on page 338)

AT THE STATE DEPARTMENT OF EMPLOYMENT BUILDING SACRAMENTO, CALIFORNIA

THE ANSWER IS
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Electrical Engineers—Division of Architecture
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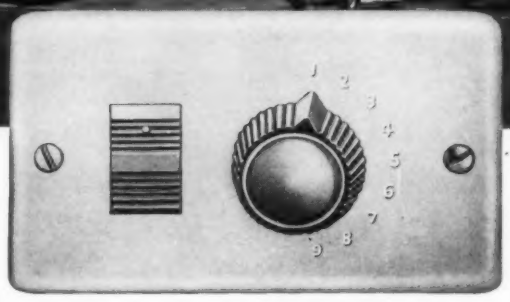

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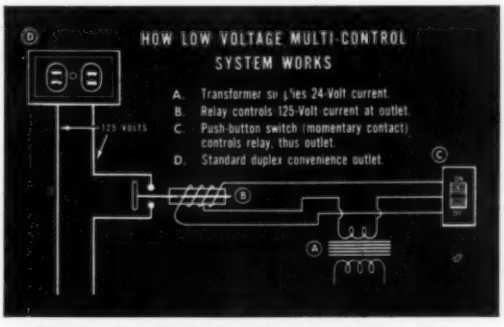
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A. Transformer supplies 24-Volt current.
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Architect: SEITZ, RACINE
Job: ELKS CLUB, RACINE

Coralux Sound Absorption Table

Coefficient of sound absorption recorded for Coralux Acoustical Plaster — ½" thick, unpainted natural finish, applied over standard Coralux scratch and brown gypsum plaster. Coralux Acoustical Plaster meets Federal Specifications SS-A-111, Acoustic Materials, Type 11, and Type 111, Class K and HH.

Frequency	Coefficients*
128	.33
256	.19
512	.41
1024	.78
2048	.74
4096	.87
NOISE COEFFICIENT	.55

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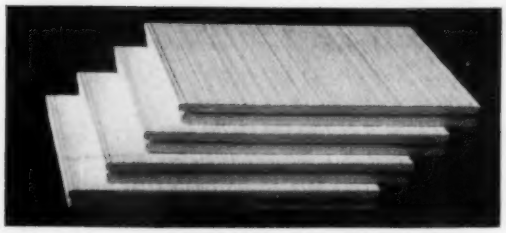

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THE RECORD REPORTS

(Continued from page 334)

The firm is located at 115 Amherst Dr., S.E., Albuquerque, N. Mex.

• Albert Kahn Associated Architects and Engineers have announced the appointment of Sol King as Director of Architecture for the firm; Mr. King has been with the firm for 20 years. Offices are at 345 New Center Bldg., Detroit 2, Mich.

• Pereira & Luckman have appointed Felix Andrew Kalinski as the firm's Director of Military Projects; Colonel Kalinski has resigned from the Air Force. The firm has offices at 9220 Sunset Blvd., Los Angeles 46, Cal.

• Perkins & Will, Architects-Engineers, have appointed six new partners, Brock Arms, John Boyce and Wilmont Vickrey in the Chicago office, and Harry Gillies, Albert Hoover and James Lothrop in the firm's White Plains office.

• Stanton and Rockwell, architects and consulting planners, have admitted Robert G. Wasson as an associate partner in the firm. New offices are located at 222 W. Adams, Chicago, Ill.

• Office of York & Sawyer (Kiff, Colean, Voss & Souder) has closed its Washington office. The firm's New York office will remain at 101 Park Ave.

New Addresses

Ellis F. Albaugh, Architect, 3800 San Pedro Ave., San Antonio 12, Texas

Bergstedt & Hirsch, Architects, 2706 W. Seventh Blvd., St. Paul 16, Minn.

Gardner A. Dailey, F.A.I.A., and Associates, Architects, 442 Post St., San Francisco 2, Cal.

Sydney Gerson, Architect, 8125 Hocquart, Montreal, Que.

Jenkins & Chisholm and Associates, Architects-Engineers, 1951 Lawrence Ave., Chicago 40, Ill.

Philip C. Johnson, A.I.A., 219 E. 44th St., New York 17, N. Y.

Kelly & Gruzen, Architects-Engineers (Newark office), The Military Park Bldg., 60 Park Place, Newark 2, N. J.

Lucas, Craig & Whitwam, Architects, 118 N. Main, Sioux Falls, S. D.

Paul Rogers & Associates, Consulting Engineers, 510 N. Dearborn St., Chicago 10, Ill.

Sanders, Malsin, Raiman, Architects, 10 St. Paul's Place, Ossining, N. Y.

(More news on page 342)

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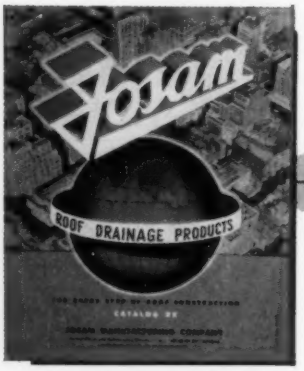
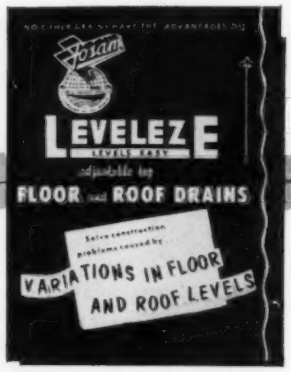


4. Catalog "RK" the complete authority on roof drainage products.



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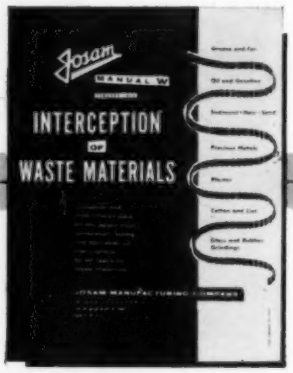

6. Manual "W", a complete documentary on the subject of waste materials and methods of control.

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2. 208 Page Manual "SK" of Specifications and Roughing-in Details.

1. 208 Page Catalog "K" — the authority on Plumbing Drainage.

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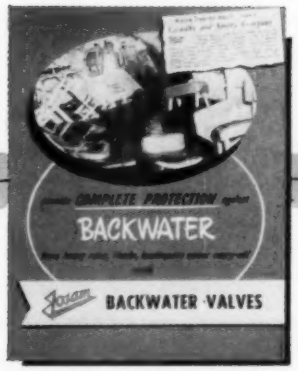
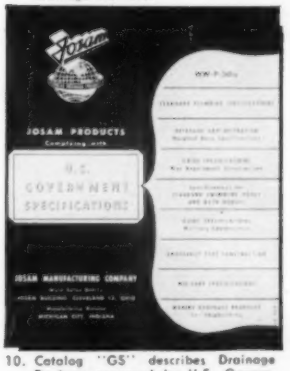
7. Manual "S" describes causes and cure for water hammer in supply lines.



8. Manual "BW" on Backwater Controls, describes the hazards of backwater and methods of control.

9. Manual "SP-5" — latest data on Swimming Pool circulation and drainage methods.



10. Catalog "GS" describes Drainage Products approved by U.S. Government for all branches of service.

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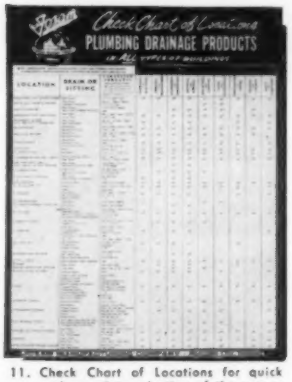
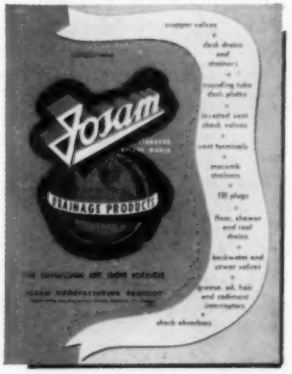


11. Check Chart of Locations for quick and complete selection of the proper products for all locations.



12. Manual "MP" Marine products approved by U.S. Maritime Commission.

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1. ☐ Catalog "K"
2. ☐ Manual "SK"
3. ☐ Manual "SF" on Super-Flo Drains
4. ☐ Catalog "RK" on Roof Drains
5. ☐ Manual "LV" on Leveleze Drains
6. ☐ Manual "W" on Interception of Waste materials
7. ☐ Manual "S" on Water Hammer
8. ☐ Manual "BW" on Backwater Controls
9. ☐ Manual "SP-5" on Swimming Pools
10. ☐ Catalog "GS" on Josam Products meeting U.S. Government Specifications
11. ☐ Check Chart of Recommended Locations
12. ☐ Catalog "MP" on Marine Drainage Products

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How to turn a warehouse into a modern office

with the help of

Electro Silv-A-King Lighting

"Magic Frame Troffers easiest to install fixture we've ever handled."

—M. J. Rihel, Supt. Hultgren Elec. Co., Chicago

Three floors of this Butler Bros. Building in Chicago, each averaging 56,000 sq. ft., were completely remodeled into the modern, air-conditioned offices shown above in exactly four months from the first planning meeting. According to Butler Bros. Engineering Dept., and the contractor Hultgren Elec. Co., Chicago, Electro Silv-A-King's Magic Frame Troffers —with their one piece removable Reflector Plate Wireway cover containing all electrical components were installed with record speed.

Throughout the entire three floors, these fixtures provide a maintained lighting level of 50 F.C. free of glare and shadow. Comments concerning these better, modern troffers have been extremely favorable from the tenants and office personnel.

Complete "Magic Frame" Data and Specification Catalog available

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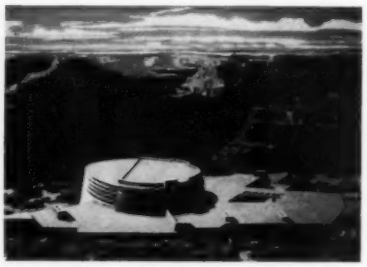
DESIGNERS AND MANUFACTURERS OF THE FINEST IN LIGHTING

THE RECORD REPORTS

(Continued from page 338)



RIM OF THE GRAND CANYON WILL BE SITE FOR SHRINE

The Shrine of the Ages Chapel, designed to overlook Arizona's Grand Canyon, is a project sponsored by a non-denominational group including a Methodist group at Grand Canyon, a Catholic group at Grand Canyon and national Jewish groups. The main chapel will have three altars, raised as the occasion demands by hydraulic lifts from the basement.

As described by architect Harold E. Wagoner of Philadelphia, the design of the main worship room is based on the circular Hopi *kiva*. The original plan was to cantilever the chapel over the Canyon rim, but this scheme was not approved by the National Park Service, and the plan now puts the chapel 200 ft back from the rim. This site has been used for years for the Easter Sunrise services at Grand Canyon. A large circular window will look east over the Canyon.

In addition to the main chapel, which will seat 350, the project also calls for three clergy studies, each accessible from the interior and from an outside court, a wedding chapel and lounge room, sacristies and administration space. Varying light conditions in the main chapel will be controlled by four rows of motor-drawn curtains. Three of these curtains will be composed of thin rods of magnesium suspended vertically; the rods will be irregularly spaced. By arranging these curtains in a number of different ways, it will be possible to vary the opacity. The fourth curtain will be of fabric.

The roof over the main chapel will be constructed of cantilevered prestressed concrete trusses with a local stone compression member. Walls will be of local stone combined with a reinforced concrete skeleton, and the concrete floors will be finished with Arizona flagstone.

(More news on page 346)

Give your homes

cooling luxury at lowest cost

with a Hunter Attic Fan

One easy-to-install unit cools entire home

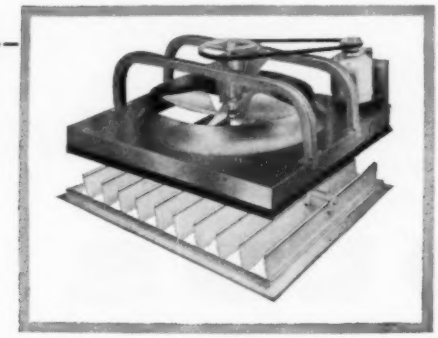
You can now provide all the luxury of a cooling system that fills an entire home with refreshingly cool air—at a very low investment per house.

The Hunter Package Attic Fan is as efficient as it is economical. Quietly pulling in fresh, outdoor breezes as it forces out hot, sticky, inside air, the Hunter will cause room temperature to quickly drop from 10 to 20°.

Easiest of all attic fans to install, the Hunter requires no replastering, repainting, suction box or other "extras" for installation or maintenance.

The compact fan unit rests on the attic floor. Ideal for even low-pitched roofs, the Hunter needs only 18" to 26" attic clearance. The "flush-mounted" automatic ceiling shutter (shown above) screw-fastens over ceiling opening, fits narrow hallways. Its eggshell finish blends with all interior colors.

Guaranteed Performance: the Hunter fan unit is guaranteed for five years; motor and shutter for 1 year. Costs only a few cents a day to operate. Only $145.00 list for the 5,000 CFM model, the Hunter is available in four sizes, with certified air deliveries to 16,000 CFM.



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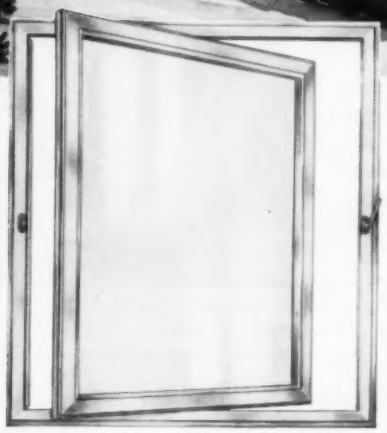
Three new office buildings of a major mid-west oil company

Architects and Engineers:

Owner's Construction Division. R. A. Niles, Manager. George W. Terp, A.I.A.



Kansas City Building

General Contractor: S. Patti, Kansas City, Mo.

This building features Reynolds Aluminum Vertically Pivoted Windows, Series 100.

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Reynolds Architect Service Representatives offer specialized assistance on aluminum design problems, regular mill product applications and commercially fabricated aluminum building products. They can help coordinate varied aluminum needs for procurement efficiency and economy. Address inquiries to Architect Service, **Reynolds Metals Company,** Louisville 1, Kentucky.

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St. Louis Building
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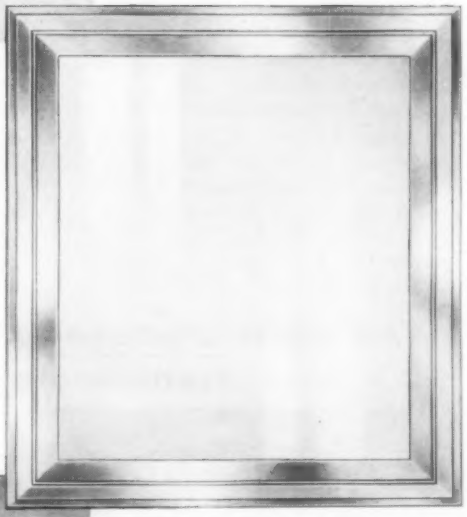
These two buildings feature Reynolds Aluminum Fixed Windows —with site lines equal to pivoted windows.



Minneapolis Building
General Contractor:
Naugle-Leck, Inc.,
Minneapolis, Minn.

Architectural Metal Fabricators & Erectors:
Crown Iron Works,
Minneapolis, Minn.

See "FRONTIER," Reynolds great dramatic series, Sundays, NBC-TV Network.

ALUMINUM

(Continued from page 342)

FORUM, No. 10, 1955 (Netherlands), reviewed the architectural efforts at E55, the "national exhibition" at Rotterdam which was somewhat lost last summer in the shuffle of international interest in Sweden's H55. The architects for the exhibit were Van den Broek and Bakema.

1

Neither of the two critics writing on the exhibit was very favorable to the building design at Rotterdam. A. Komter expressed regret, in the English translation, that no new buildings of distinction had been designed for the exhibit, and deplored the fact that the two permanent buildings, while they occupied a site which had formerly been

2

city green, added nothing of architectural value to the city.

B. Hendriks, who shared Heer Komter's disappointment in the architecture, said he was particularly discouraged by the lack of unity of art and architecture, but nonetheless praised Karel Appel's outside murals (1) and the "glass in concrete" window by Daan Wildshut (not shown, although another mural in the acoustics center, by Wildshut and Ger van Iersel, is shown in 2).

ARCHITECTURAL DESIGN, November 1955 (British), celebrated the magazine's 25th anniversary with, to begin, a lead article by Max Bill titled "The Beginning of a New Epoch in Architecture." Granting that we live in an age of diversity, Herr Bill said that nevertheless this is a "diversity of mediocrity," amplified by the architectural profession which, at the start of the modern movement supplanted reason with thesis and manifesto, and has become more and more slave to a modern academism.

"It is a good thing," he said, "that one has the freedom to write that it is of no importance now whether Palladio's Rotunda was ever a serviceable house to live in or whether Michelangelo's Porta Pia ever fulfilled a practical use, and that therefore one may allow a present-day architect to build unsuitable houses because they are beautiful. One can and may do anything. All standards have seemingly gone up in the air — seemingly, since two standards have remained which were overlooked for some time by all that architecture and carefully hidden self-expression: the human being and the economy.

"These two forces started to build, to some extent without architects, as the latter were preoccupied with higher aims: the economy, because it has to be active otherwise it perishes; the human

(Continued on page 348)

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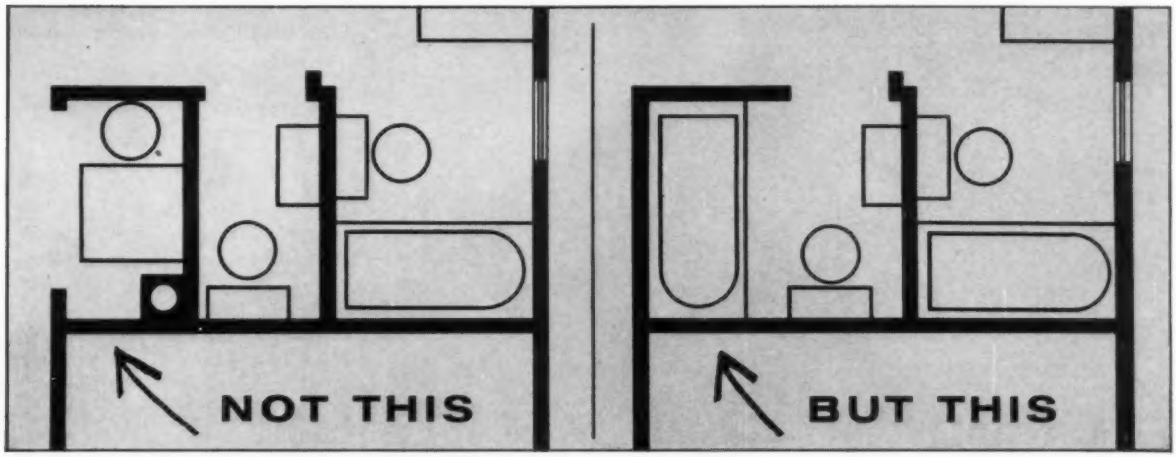

3-BEDROOM RANCH HOUSE GETS BONUS OF SECOND BATHROOM INSTEAD OF SMALL POWDER ROOM WHEN G-E WEATHERTRON IS INCLUDED IN THE PLANS. INSTALLATION: IN THE GARAGE!

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THE RECORD REPORTS

CURRENT PERIODICALS

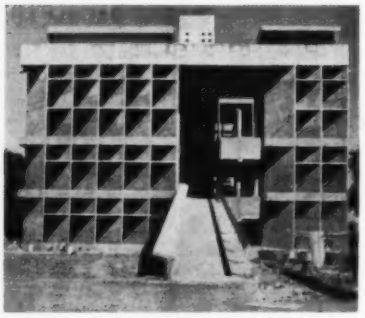
(Continued from page 346)

being because he has to live, otherwise he too perishes. These forces have created something which they jointly consider desirable, but which has chiefly benefited the stronger partner, the economy."

Herr Bill, in arriving at some admittedly pessimistic conclusions, declared that architects must reassess their art posthaste. "If we are not in a position to analyze the real needs of man with scientific method, instead of accepting the habits and imaginary necessities, then we do not progress. We have to find new, better and more careful methods of analysis. If we are not in a position to organize these new analyzed needs without making an ant-like organization out of the multitude of mankind, any discussion about the future of architecture is superfluous. If we are not in a position to create a functional unity by analysis and organization, which is more convincing than all that has gone before, as well as being economically feasible, we cannot get any further. If we do not renounce modernistic academism and if we cannot replace it by objective shaping of the functions of life, then modern architects had better pass over to a different hobby. . . . We stand today more than ever on the threshold of a new epoch. We have to revise everything, to examine afresh and to arrive at new achievements. That for the present has seemingly little to do with architecture as an art; but perhaps just this strict limitation to essentials is the great art."

Maxwell Fry, who was, so to speak, in on the ground floor of the British modern movement, reviewed "Twenty-Five Years of Modern Architecture in England" from the early work of Welles Coates and of the Tecton group to the Smithsons and their "New Brutalism." The magazine showed international examples of current work, mostly that of "the younger generation."

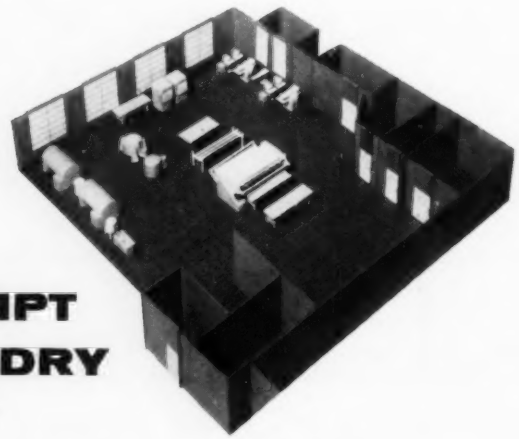
Again with *Architectural Design*, its January 1956 issue featured two new buildings by Le Corbusier in Ahmedabad, India — the Mill Owner's Association Building (below), with its angled fins, was called "a cool statement"; the other building is "a spiral museum."



THE VIRGINIA RECORD, November 1955 (United States), was the magazine's third annual Architectural Arts Edition, in which examples of work of architectural firms of members of the Virginia Chapter of the American Institute of Architects were shown. So far from deserving the "Williamsburg blight" epithet, coined by Prof. Marshall Fishwick to describe current Virginia architecture that looks backward rather than ahead, were most of the examples given that two stores recently built *at* Williamsburg were justly described as "contemporary."

In an editorial introduction to the

(Continued on page 350)



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Architects: Foley, Hackler, Thompson & Lee — *General Contractor: George D. Johnson Co.*

Hope's Multi-Story Window Walls Provide a Built-In Newness That Lasts

This handsome, recently completed school building is another example of a Hope's Multi-Story Window Wall installation. The entire facade shown is comprised of Hope's pressed metal frames, painted white, with the large glass areas glazed directly into them. The ventilators inserted at intervals are Hope's Heavy Custom Casements. Floor-to-sill insulated panels are red porcelain enameled. These red panels and white frames create an effect that is most attractive and only occasional maintenance is required to retain this newness indefinitely.

The ease of construction using Hope's Window Walls is a contributing factor to the speed of enclosure and to independence of weather conditions and outside temperatures. The light weight of these systems results in structural economies right down to the footings. The tightness and rigidity of the structural elements of Hope's Window Walls keep air infiltration and leakage minimized so that fuel savings are materially increased. You will find Hope's Window Walls are the best way to clothe buildings which require large expanses of glass.

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HOPE'S WINDOWS, INC., *Jamestown, N.Y.*

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

CURRENT PERIODICALS

(Continued from page 348)

issue, the magazine praised the work of Virginia architects, and blamed the paucity of "the 'modern' architecture that is the rage of the less conservative remainder of the country" on a lack of "willing clients." ". . . Our architects," the note went on, "are to be commended for giving some thought to their client's desires although the net result has been an appearance of *ultra-conservatism* and *lack of imagination* in their work" [italics theirs].

CANADIAN HOMES AND GARDENS, January 1956 (Canadian), carried words of advice from associate editor James A. Knight to prospective home builders. To the question "Should you hire an architect?" the answer, said Mr. Knight, "is definitely 'yes,' provided you can afford his services. Roughly speaking, you can afford him," according to Mr. Knight, "if the house you intend to build will cost more than $15,000." Further in the architect's favor, the writer explained that "for his fee he will design a house that will fit you like a tailor-made suit, provide all the information you need about contracts, builders, mortgages, payments and by-laws, and he'll supervise construction every step of the way." For prospective clients whose budgets are under $15,000 but who would still prefer an architect-designed house the situation is not entirely hopeless, according to the author, who admitted that "the conflict between [the architect's] inclinations and the client's preferences and budget" discouraged most architects from accepting commissions for small houses, but said also that many architects would be happy to accept such commissions for imaginative clients.

For those who do not feel they can afford an architect, Mr. Knight offered an interesting alternative. "If you are building without an architect," he said, "you will need a good lawyer at your beck and call every step of the way." The lawyer's services in such a case could include not only advice on contracts, but might cover the selection of a builder and perhaps the writing of specifications as well.

specified by State Authority of
Pennsylvania
Eastern Pennsylvania Psychiatric Institute, Philadelphia, Pa.
Architects: Harbeson, Hough, Livingston & Larson and Harry Sternfeld, under supervision of THE GENERAL STATE AUTHORITY Harrisburg, Penna.
This noted project of Pennsylvania's State Authority is but another milestone in the program of public health so typical of the Keystone State. Naturally, we're proud that Halsey Taylor drinking water equipment was specified for this splendidly designed edifice. The Halsey W. Taylor Co., Warren, O.
HALSEY® TAYLOR
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A type for any purpose—consult Sweet's or write for catalog.

HOGAR Y ARQUITECTURA, November 1955 (Spanish), is the first issue of a new review devoted to multiple housing developments. A publication of La Obra Sindical del Hogar y Arquitectura, this issue surveyed the accomplishments of the 1954–55 building program, and showed examples of housing developments throughout Spain, including the large "Francisco Franco" group in Madrid. (There are as well "Franco" groups, albeit smaller ones, in Aviles, Palma de Mallorca, Cabra.) The journal is published at Casa Sindical, Paseo del Prado 18–16, Madrid.

INTEGRAL, September 1955 (Venezuelan), while its content in this first issue is overwhelmingly architectural, indicates in its subtitle that its purpose is that of a cultural omnibus, covering, as well as architecture, city planning, engineering, the plastic arts, cinema and folklore. It is published at Segundo Subsuelo, Centro Profesional del Este, Calle Vilaflor, Sabana Grande, Caracas, Venezuela.

(More News on page 352)

Thousands of Bethlehem High-Strength Bolts were used to join structural members in framework for new Prudential office building in Jacksonville, Fla. *Architects:* Kemp, Bunch and Jackson. *Contractor:* Daniel Construction Company of Alabama. *Fabricator and Erector:* Ingalls Iron Works Company.

High-Strength Bolting Speeded Erection of New Office Building in Jacksonville

This handsome building encased in marble, limestone and pink granite is the South-Central headquarters of The Prudential Insurance Company of America, at Jacksonville, Fla. The 22-story structure has a steel framework of 5,893 tons, held together with thousands of Bethlehem High-Strength Bolts. This method of construction saved erection time, as the bolting was completed within a week after the last piece of steel was set.

High-strength bolting is rapidly increasing in popularity as a means of erecting steelwork economically. Bolted joints are made rapidly. The bolts, used with hardened washers, can be installed in seconds. A holding wrench grasps the bolt-head, and the nut is driven to predetermined tension with a calibrated pneumatic impact wrench. That's all there is to it! There's no fire hazard involved. Besides, the bolting operation is less noisy than riveting, making it more suitable for use in hospital and school zones.

Bethlehem High-Strength Bolts are made of carbon steel, and come in sizes to meet virtually every construction need. They are heat-treated by quenching and tempering, and meet every requirement of ASTM Specification A-325.

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BETHLEHEM STEEL

(Continued from page 350)

GLASGOW'S AIR TERMINAL EMULATES A WATER SPIDER

Renfrew Terminal, the airport recently opened in Glasgow to handle domestic air traffic, was the first air terminal to be commissioned and erected by the British Ministry of Civil Aviation, and was designed with the express direction from the Ministry that it should offer a definite contribution to airport design.

Starting with a site that offered no solid foundation as far down as 60 ft, where test boring was given up, the architects, Rowand Anderson, Kininmonth & Paul, decided to "float" a light reinforced concrete frame on concrete "pads." As the architects phrased it, "The principle adopted has a somewhat similar counterpart in aquatic insects such as the water spiders, which do not break the surface tension of the water on which they rest."

"It is for this reason," they continued, "rather than for dramatic effect, that the bowstring arch is used to support and steady the front of the concourse roof. It can be fairly claimed that in general the design, although unusual, did not take its form because of idiosyncrasies on the part of the designer, but is the logical outcome of conditions which seemed to imply the use of reinforced concrete and glass for the structure, combined with the maximum prefabrication of individual parts."

Nonetheless the architects added: "It is not claimed that this is a purely functional building. Pictorial effects and arrangements of light and shade were studied. The fluid nature of concrete as a building material in its own right is expressed by silhouette and natural form, while the extensive use of glass walls is an attempt to integrate the building with its surroundings by day and at night. When a choice could be made between esthetics and utility, preference was given to the former. . . . The architect considered it more important to impress a strong design, firm on the mind of ground and air observers, than to provide a purely utilitarian method of enclosing a given volume of space."

The terminal consists of three buildings — the passenger building, a mete-

(Continued on page 354)

HIGH SCHOOL GYMNASIUM . . . MAYNARD, MINNESOTA
Architects: Haarstick Lundgren & Associates, Inc. • St. Paul, Minn.

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Such is the report from Haarstick Lundgren & Associates, Inc., who were given the challenge of providing an attractive design with low cost. "Important credit," they said, "must be given Rilco Glued Laminated Wood Arches and the prompt cooperation of their representatives in helping us to meet the challenge."

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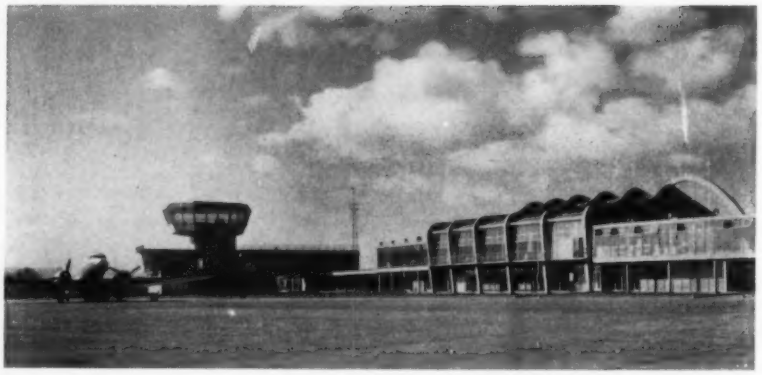
(Continued from page 352)

orological and operations building with control tower, and a small building for the staff of British European Airways. Facilities in the passenger building include waiting rooms, a customs hall, kitchens, dining room, buffet and bar. A reinforced concrete canopy was cantilevered over the driveway at the entrance to the building.



Besides the soil conditions and a site predetermined by the position of the runways and the economic requirement of siting the building adjacent to an existing paved area, the design was affected by a national Schedule of Accommodation issued by the Ministry of Transport and Civil Aviation setting out facilities to be provided, and by international regulations controlling the height of the buildings. Other problems presented to the architects were the necessity for extreme economy in first costs, for flexibility with a view to future expansion, and for speed of erection.

The consulting structural engineers were Blyth & Blyth.

(More news on page 356)

★

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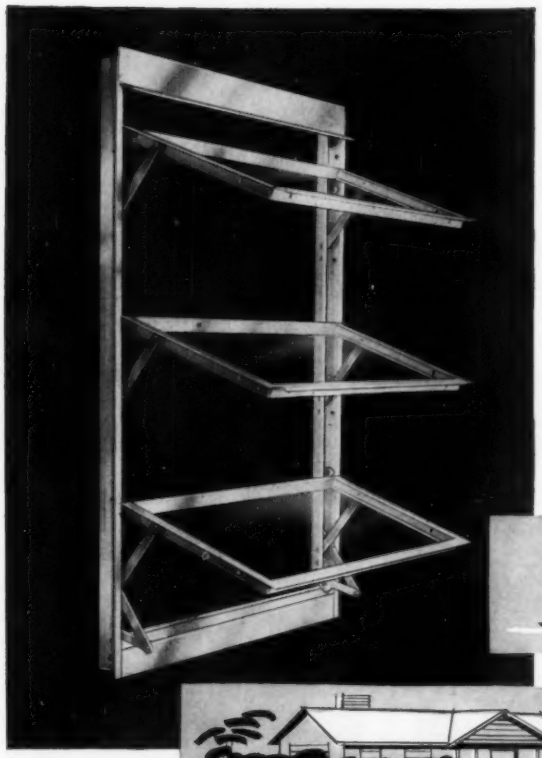

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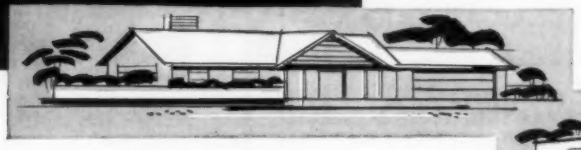

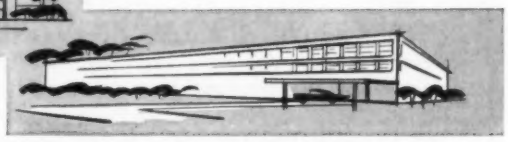

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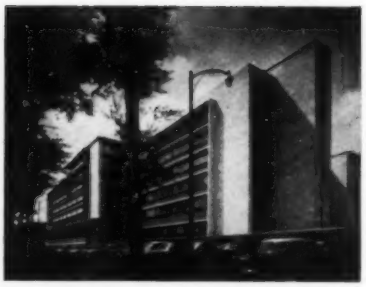
THE RECORD REPORTS

(Continued from page 354)

HOUSTON A.I.A. EXHIBITS ITS 1955 HONOR AWARDS

As part of its activities during Texas Architects Week last April, the Houston Chapter of the American Institute of Architects held simultaneous exhibits of its annual honor awards program in the lobby of a downtown bank and at the Contemporary Art Museum.

The chapter presented four Medals of Honor winners (shown on this page) and six Awards of Merit: the Herbert Blum residence — Beaumont, Bolton and Barnstone, architects; Magnet Cove Barium Corporation Building — Pierce & Pierce, architects, with O'Neil Ford and Richard Colley, consultants; Durham Clinic — Pierce & Pierce, architects; Sally's Sandwich Shop — Robert W. Maurice, architect; Texas Children's Hospital — Milton Foy Martin, architect; and the Chapelwood Methodist Church — Hamilton Brown, architect.



Medals of Honor went to architects Mac Kie & Kamrath for the M. D. Anderson Hospital and Tumor Institute (above) and to architects Cato, Austin & Evans, with associate Edmund Furley, for the Engineering Office and Classroom Building at the University of Houston (below)

Two houses received Medals of Honor in the Houston competition — a house for Miss Nina Cullinan, designed by architects Cowell & Neuhaus (above), and the Liese residence, designed by architects Lloyd & Morgan (below)

(More news on page 358)

Pratt & Lambert PRIMAFIL for Cinderblock Walls

Unretouched photo shows how just one coat of Pratt & Lambert PRIMAFIL on cinderblock has filled voids and produced a smooth, hard foundation for finishing.

CAN BE BRUSHED, ROLLED OR SPRAYED. Pratt & Lambert PRIMAFIL is the most successful, most versatile product yet offered for simultaneous priming and filling cinder and other coarse aggregate interior block walls. It goes on with exceptional ease by brush, roller or spray. It fills voids to any desired degree, coats sharp edges, hides well, dries rapidly and seals perfectly. It uniformly holds out the finish; either Pratt & Lambert New Lyt-All Flowing Flat, Lyt-All Stippling Eggshell or Cellu-Tone Satin.

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Designing for maximum return from an investment in high-cost space is an ever-recurrent architectural problem. The plan of the Rockefeller Center office of The New York Savings Bank represents an outstanding solution, packing a quarter-billion dollar deposit capacity into 4000 square feet.

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Banks are, of course, only one of many types of structures in which the ability of the *ii-TV* System to transmit visual information instantly and accurately over any distance will improve the building's functioning. Wherever it is used, whatever job it does—in commercial, in industrial or in institutional buildings—the *ii-TV* System gives the architect a revolutionary planning tool.

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(Continued from page 356)

CARNEGIE FRATERNITIES GET ONE BUILDING, TWO HOUSES

The Carnegie Institute of Technology and two of the fraternities on the campus have under construction, as a joint project, the first of five proposed buildings planned to alleviate the shortage of fraternity housing at the school.

The new building will consolidate the two organizations under one roof; each of the groups will occupy one of the two L-shaped houses, which will be separated by a solid wall. This solution, proposed by Pittsburgh architect Lawrence Wolfe, satisfied both the university and the fraternities, who were anxious to preserve the individuality of each group, but willing to cooperate on the financing. An earlier plan to buy and convert private houses was turned down on the grounds that most of the suitable buildings were too far from the campus and had not, in any case, been designed for group living.

Each organization will have its choice of the brick pattern to be used on the façade, which will be identified in each case by Greek letters. The front and rear court areas can also be landscaped according to each group's preference.

The units will each house 36 men, and will provide dining space for 50. Dining facilities and kitchen, lounge room and trophy room will be located on the first floor. Also on the first floor, a suite of rooms with a private entrance may be used as an apartment for the housemother or as powder and cloak rooms for women visitors.

Recreation rooms, a snack bar, chapter room and storage area will occupy the basement.

The second and third floors will be taken up by sleeping and study quarters. Here again the groups have their choices of plans — these floors can be arranged for rooms assigned for study and sleep to two men, or might have larger areas designated for four-man studies with common sleeping facilities for 18.

A driveway encircling the building will provide parking space for 50 cars, and the court areas could be converted to parking space if necessary.

The total cost of the building will be $312,000. Occupancy is scheduled for September of this year.

(More news on page 360)

"BIG STEEL" NEEDED

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Fairless Works of United States Steel Corporation's plant at Morrisville, Pa., on the Delaware River, is the country's largest single steel construction project undertaken at one time. Waterproofing done by Lewis and McDowell, Inc., New York City.

When permanent waterproofing was wanted on the foundation of U. S. Steel's new "Fairless Works," Karnak was chosen by the contractor. The world's most modern steel mill called for the best in all materials. That's why 750,000 yards of Karnak were used to protect against water, wherever there was a hydrostatic head.

Why Karnak? Because it has the Membrane System of waterproofing *that holds secure* against hydrostatic head or any water condition.

The secret to the extreme water resistance is the Karnak Membrane Fabric. Open Mesh Cloth, specially woven of long-fiber cotton is carefully saturated with highly refined asphalt so as to leave the mesh open. When this fabric is layered on the job with alternate moppings of liquid asphalt, it provides a tough, thoroughly waterproof membrane that resists cracks, abrasion and settling to maintain water resistance through the life of the structure.

The Karnak system is also the best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels... ***Lewis Asphalt Engineering Corp., 30 Church St., New York 7, N. Y. Dept. 112***

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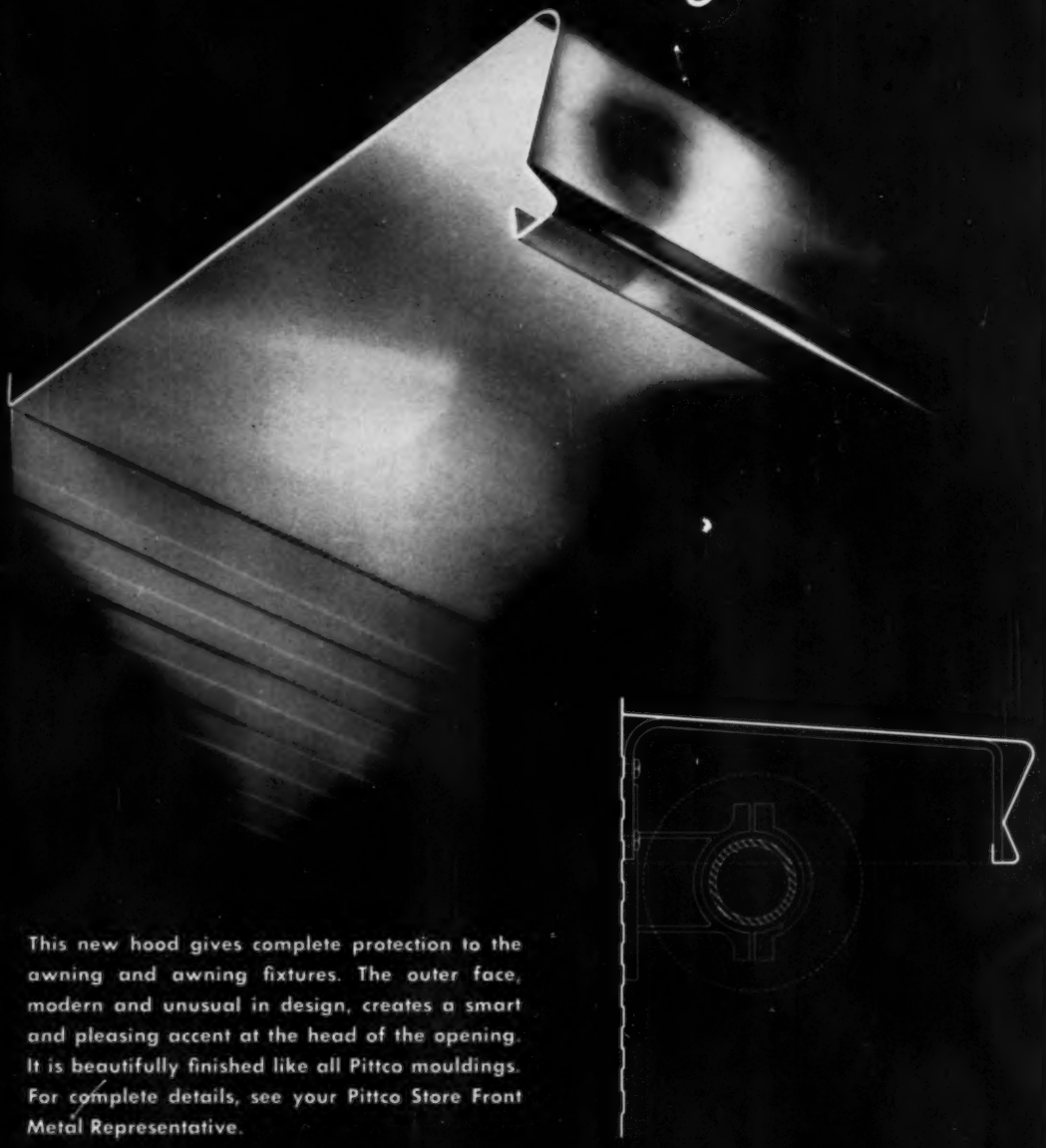
New Pittco NO. 84 Awning Hood



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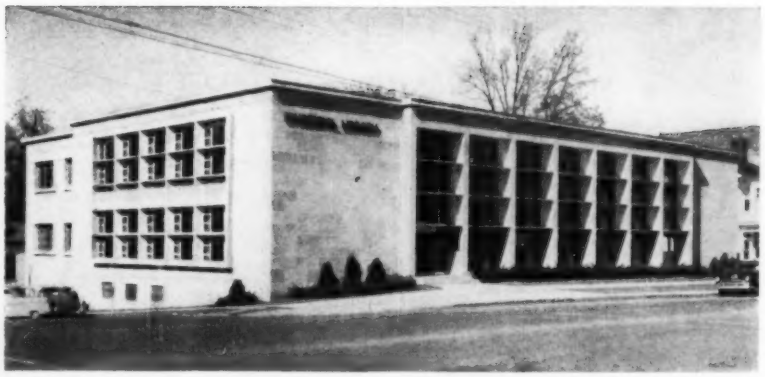
(Continued from page 358)

NEW BUILDING REFLECTS EXPANDING LIBRARY USES

More than the shelving capacity was enlarged (from 50,000 to 200,000 volumes) for the Jackson, Miss., Municipal Library when that building was dedicated. Among the expanded facilities was an assembly hall seating 150, with entrance from the outside as well as from the main library so that it can be used for after-hour functions. A microfilm room, and two record listening rooms in the art and music department, are additions to the library's facilities, as are separate work rooms for each department, a book-lift, and inter-communication system. Scattered browsing and reading areas include an outdoor reading terrace.

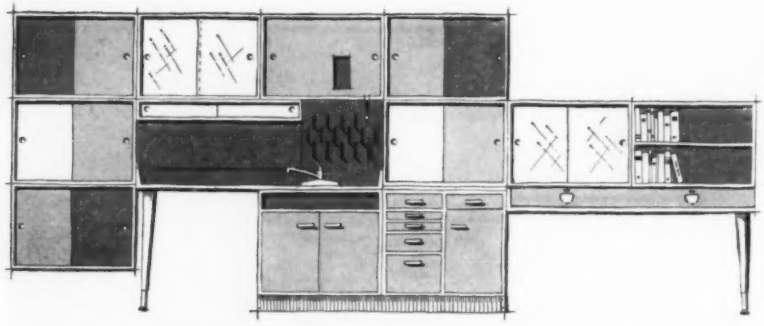


Above: main façade of glass and limestone. Below: on main floor, view leads past charge desk and card catalogs to reading area

The main floor, visible through the glass façade, is illuminated by cove lights at night to display the library, which faces on one of Jackson's major business streets.

Located on the main floor are separate reading areas for adults, young people and children, browsing areas, card indexes, reference department, the main charge desk and the outdoor reading patio. On the second floor are the art and music department, the microfilm room, a "local history" room to house books and documents of the region, a business and technology department and staff rooms. The ground floor, which can be entered from the 26-car parking lot as well as from a side street, contains a stack area, mechanical and staff service rooms, public rest rooms, assembly hall and conference room.

N. W. Overstreet, Jackson, was the architect.



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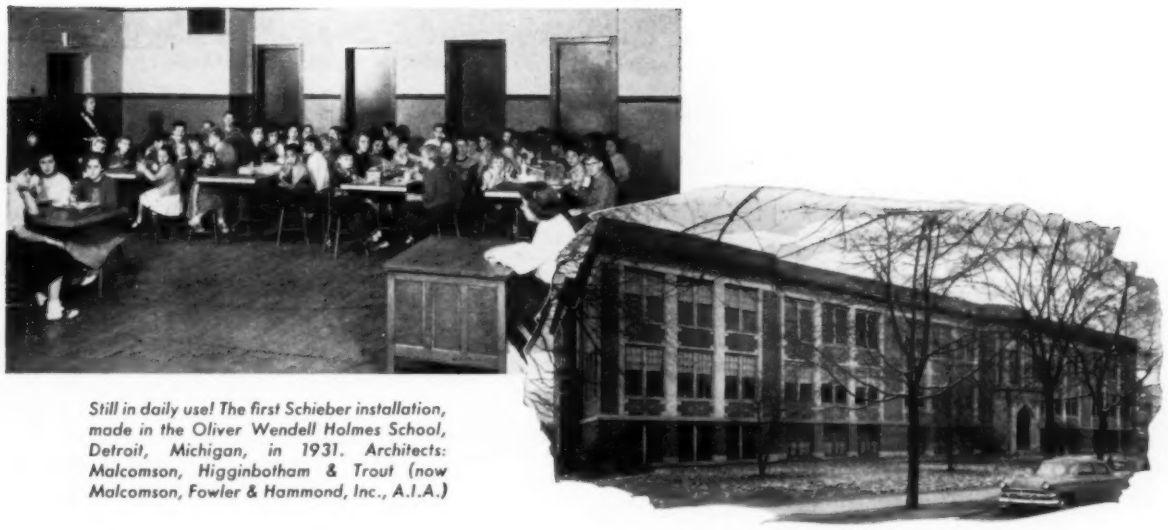

Still in daily use! The first Schieber installation, made in the Oliver Wendell Holmes School, Detroit, Michigan, in 1931. Architects: Malcomson, Higginbotham & Trout (now Malcomson, Fowler & Hammond, Inc., A.I.A.)

Some Buildings Grow Old Gracefully!

Recent Schieber installation, Lynnwood Junior High, near Edmonds, Wash. William Arild Johnson and Harry E. Botesch, architects and engineers.

How well a building wears depends as much on the architect's and client's vision and aggressiveness as on sound engineering and construction. When Schieber introduced IN-WALL Folding Tables and Benches 25 years ago, the principle of multiple-use-of-space was new. Today it is considered in the planning of every school.

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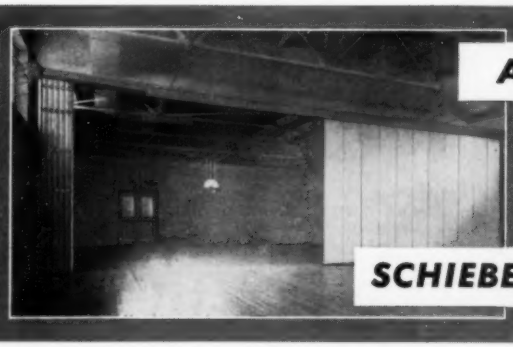

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SCHIEBER-HAWS FOLDING PARTITIONS

THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 48)

tion rider on any school aid bill may again succeed in blocking legislation.

What the President proposed, in short, was a five-year emergency aid program which he believes would get the states and their school districts in a position to carry on alone from there on.

The main provisions of the program:

1. A program of Federal grants amounting to a total of $1250 million, to be appropriated at a rate of $250 million annually for five years, matched with state funds, to supplement local construction efforts in the neediest school districts.

2. A program to authorize $750 million over five years for Federal purchase of local school construction bonds when school districts cannot sell them in private markets at reasonable interest rates.

3. A five-year program of advances to help provide reserves for bonds issued by state school financing agencies. These bonds would finance local construction of schools to be rented and eventually owned by the local school systems.

4. A five-year, $20 million program of matching grants to states for planning to help communities and state overcome obstacles to their financing of school construction.

The best present estimates indicate that, on a nationwide basis, the current rate of construction only a little more than meets each year's new enrollment and replacement needs, the President said in his special message, adding that this rate barely dents the large accumulation of needs from past years.

The message recalled the White House Conference on Education held here last fall and said that its general recommendation on Federal aid for classroom construction should be acted upon by Congress.

States and communities acting independently, the President acknowledged, cannot solve the full problem rapidly enough. He called attention to the "hundreds of thousands" of children studying under crowded conditions, in half-day and doubled-up sessions, and in makeshift buildings not designed as schools, and noted that many classrooms in use today are obsolete and each year more rooms become so. He also noted that school enrollments will continue to increase rapidly over the years ahead, requiring still more classrooms.

"Against this backdrop of needs," the message said, "states and communities are substantially increasing their classroom construction. But many communities simply do not have available locally the resources needed to cope both with the legacy of shortages from past years and with future needs. Unless these communities get help, they simply cannot provide enough good schools.

"The rate of classroom construction must be further increased, as the White House Conference on Education asked, by a greater combined effort of local and state governments."

ECONOMIC REPORT INVOKES U.S. AID AS "PARTNERSHIP"

The Administration's philosophy of Federal government partnership in the construction of what it calls public assets was made manifestly clear in the President's annual Economic Report to the Congress. All levels of government share a responsibility for providing the public improvements on which the general welfare and growth of the private economy heavily depend, the report said, holding

(Continued on page 364)

DODGE Building Studies

DESIGN FOR MODERN MERCHANDISING: Stores, Shopping Centers, Showrooms

by the editors of ARCHITECTURAL RECORD

A detailed study of the physical design of selling establishments of all types. Included are stores for soft and hard goods, food stores, department stores, wholesale showrooms, and that offspring of a booming, suburban market, the shopping center. 254 pages, 8¾ x 11⅝, over 600 illustrations, $8.95.

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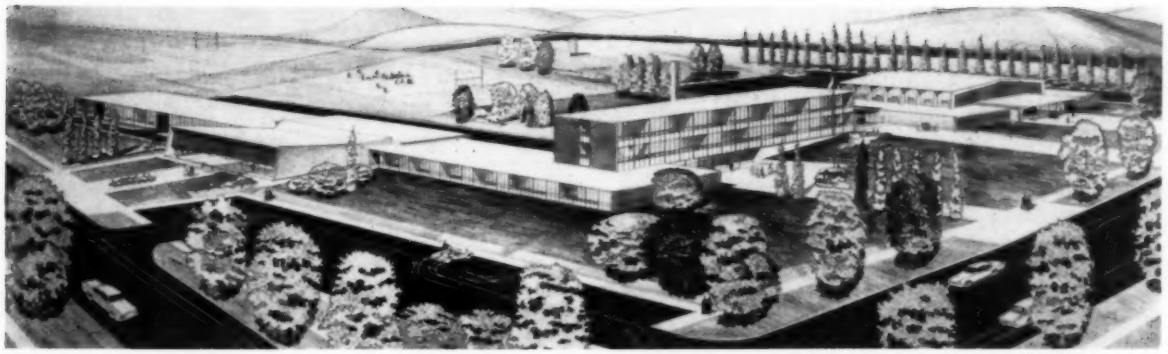

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MARMET WAUSAU, WISCONSIN

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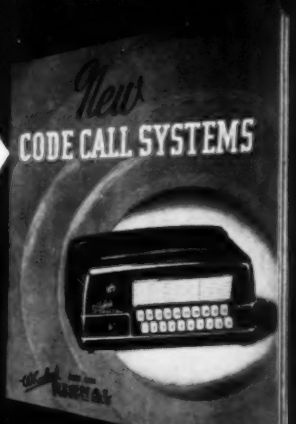
Descriptive Bulletin 4B-7 available on request. Write for your copy now to Signal Engineering & Mfg. Co., Long Branch, New Jersey.



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HH-13	12"	2- 75 W
HH-15	14"	2-100 W
HH-17	16"	3-100 W

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THE RECORD REPORTS
WASHINGTON TOPICS

(Continued from page 362)

that the Federal role should be that of *encouraging* state and local agencies with their public construction programs.

The message recommended that outlays for public construction during the next few years should be large enough to contribute decisively toward removing a backlog in most fields, replacing obsolete facilities, and providing for normal growth.

The shortage of school classrooms was assigned first mention in the listing of needs in the Report, which declared that no deficiency is more important for the nation's future. Noted was the fact that classrooms are being built at a record rate of 67,000 units per year. But even at this rate, it would take many years to remove the backlog — estimated at more than 200,000 rooms — since the greater part of the new construction must provide for growth and replacements.

Federal assistance was called "essential" if the current critical shortage is to be removed over the next few years.

Tied in with the school need discussion in the Economic Report was mention of "grave inadequacies" in facilities for medical research and for training physicians, dentists and health scientists.

Congress also was urged to extend the Federal loan program for college housing.

In the hospital field, the report called for a two-year extension of the Hill-Burton Act and again recommended Federal insurance of mortgage loans for the construction or improvement of private health facilities not covered by Hill-Burton.

There was this conclusion:

"The limitation of Federal efforts to their proper sphere in the construction of public assets will require the states and localities to continue assuming heavy responsibilities for public works. There can be little doubt that the great majority of them have both the economic and financial capability of doing so."

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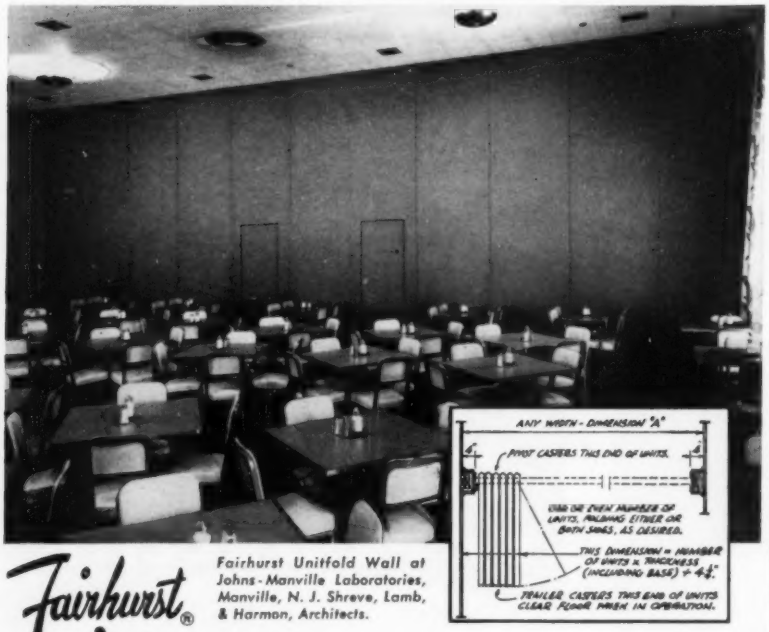
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PRODUCERS JOIN N.A.H.B. IN STANDARDIZATION PUSH

The National Association of Home Builders and the Producers' Council, Inc. have joined hands in a new effort to cut home construction costs through standardizing materials and equipment dimensions. Door and window openings are the first concern and the hope was expressed that a plan of modular measure could be applied to any new standards developed.

"Desirable and functional" dimensions will be established by mutual agreement between the two associations, it was said. Once the standardized products are defined, a joint P.C. and N.A.H.B. effort will be made to persuade manufacturers to make the items and home builders to use them.

The project is being carried on by the Council's Technical Department and N.A.H.B.'s Research Institute. The full membership of both organizations will be cooperating.

Standardization of materials and equipment is something everyone in the industry has been talking of for many years, P.C. President William Gillett of Detroit Steel Products Company noted.

"All of us recognize the value of standardization and the resulting simplification," he commented. "Both manufacturers and builders will gain, but the real

(Continued on page 366)

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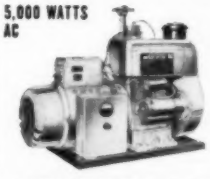

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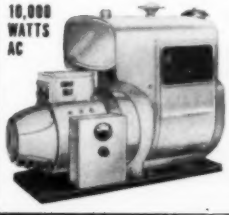

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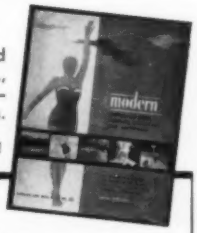

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 364)

beneficiary will be the home buyer, who will get a better house for less money."

Under the proposals, manufacturers would be able to mass produce a limited number of sizes. Warehousing and shipping costs would be cut and the builder's problems would be simplified. The builder would also have greater flexibility in design and variation of his homes.

The drive toward standardization and simplification is to be carried on through informational meetings before home builder chapters, visual educational aids on use and application for schools teaching light construction, and through builder short courses as well as mechanic training.

ARCHITECT-ENGINEER ROLE IN LAB SELECTION UPHELD

At least three national professional societies, the American Institute of Architects among them, have endorsed the idea of architects or engineers being responsible for the selection of testing laboratories where such services are used in connection with construction projects.

The procedures for such selections have been fostered by the American Council of Independent Laboratories, Inc., Washington, D. C. The Council's committee on architects and engineers, headed by Frank Harder, Engineering Division, Barrow-Agee Laboratories, Inc., Memphis, Tenn., worked some 18 months to devise the policy.

The A.C.I.L. has taken the unanimous stand that laboratory selection should be the responsibility of the owner or his agent, the architect or engineer. Said Mr. Harder, "The professional status and general welfare of many laboratories has been seriously endangered by a widespread practice in the construction industry in which, many times, a project owner's specifications required the general contractor to select and employ the laboratory whose services would be used on the project. Since the primary obligation of the independent is to protect the owner's interest, this procedure placed the laboratories in a position of questionable and conflicting responsibility. It was considered unsound practice whereby a condition of dual allegiance was implied and forced upon a laboratory."

The following policy statements have been adopted by the national professional groups:

The American Institute of Architects — "When the services of a commercial laboratory are required for construction work, the selection of the laboratory will be made by the architect."

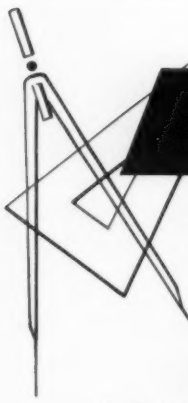
The National Society of Professional Engineers — "For the services of a commercial testing laboratory on engineering construction projects, the selection, employment and payment shall be made by the owner or his engineer as his agent."

The American Society of Civil Engineers — "The executive committee endorses the recommendations made, with an amendment, however, that payment should be made by the owner and not the contractor."

FHA ISSUES NEW RULES AS SPUR TO MILITARY HOUSING

The Federal Housing Administration has decided to defer to the preferences of the military entirely in the design

(Continued on page 368)



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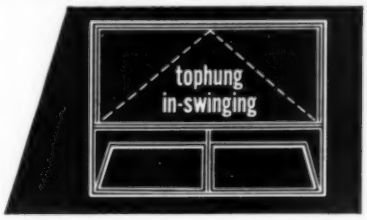

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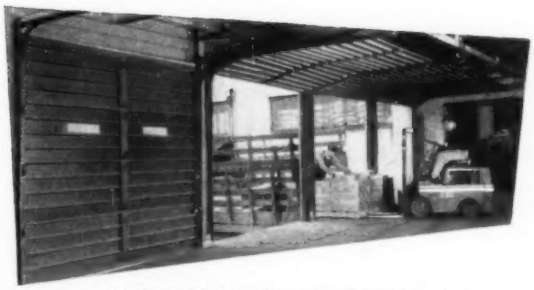

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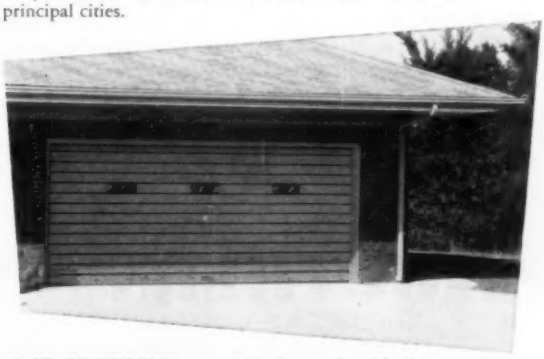

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WASHINGTON TOPICS

(Continued from page 366)

and construction of Title VIII armed services housing. Only 40,000 units of this type of shelter will be provided during fiscal 1956 — through June 30 — although Congress last year amended the law to permit construction of 100,000 units. Red tape and delays in getting the program under way were given as reasons for the lesser number.

Under the new plan, FHA insures privately-financed mortgages 100 per cent, and all the housing is initiated by the military services.

FHA is insisting, of course, that all statutory limitations and requirements be met. And FHA will attempt to guide and assist the services in obtaining economy, appropriateness, safety, livability and "appeal" in its housing. The design, said the housing agency, should be residential in character, its various component elements providing a homelike atmosphere. The housing agency would like to see "military" and "institutional" influences entirely eliminated from such design.

Further, FHA said a project plan should recognize all advantages afforded by its site, and the living units and buildings should be planned and designed to conform to local customs and climatic conditions.

Inspection functions will be performed by the military, and it will assume full control of the housing after completion.

Here is how the system works:

The military contracts with an architect-engineer for design, and through a bid procedure, contracts to assure construction and financing. Private mortgage funds are employed with FHA insuring the full amount. Architectural processing at FHA is similar to that for Section 207 projects. Once the project is completed, the military takes over full operation and details. In the capacity of loan insurer, FHA has a vital interest and a right to certain specifications of its own regarding project development.

Architect-engineer services will be provided in two parts. First, the preliminary phase of service involves consultations and preparation of preliminary sketches, typical floor plans, elevations, sections, preliminary site development plans and cost estimates. The final phase involves development of drawings and specifications through their final state of completion as contract documents.

Essential utilities and access, both on-site and off-site, must be provided, FHA insists. The mortgagor-builder will be responsible for on-site work only, the military furnishing off-site facilities unless utility companies or other government agencies assure them. In some instances, certain on-site work can be provided by the military and not included in the contract bid.

This type of housing, constructed under the so-called Capehart amendment, will provide for Army, Navy, Air Force and Coast Guard personnel.

PEOPLE AND THEIR HOUSES: SOME REACTIONS SURVEYED

"What People Want When They Buy a House," recently published by the Department of Commerce for the Housing and Home Finance Agency, is a 125-page report on information gathered in a sample survey of 1000 home buyers whose deeds of transfer were registered between January 1, 1949, and July 1, 1950. These urban area dwellers were selected carefully by the Survey Re-

(Continued on page 370)

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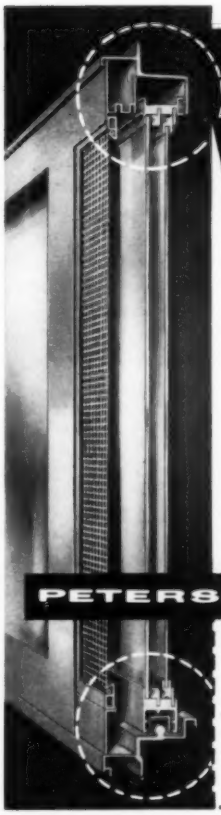

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 368)

search Center of the University of Michigan in an effort to make the report as representative of all buyers in the period as possible.

Results indicate that 38 per cent of the buyers interviewed were as much or more interested in location than in any particular feature of the home; 20 per cent were looking for a house of specific size, and 25 per cent for a satisfactory price; others for a specific number of stories, living area, or lot size.

What these persons actually bought differed from what they had in mind originally — in some cases substantially. The new book details in text and table their satisfaction or dissatisfaction with various features. There are sections on these likes and dislikes concerning eating arrangements, kitchen, living room, bedrooms, bathroom and other elements. Characteristics of the home buyers themselves are described, what they sought, what they finally bought, the house setting, size, heating system, etc. The report also discusses price, how the purchase was financed, improvements buyers made, and changes they would like to make. Both new and old houses are covered in the survey.

In a foreword to the volume, Albert M. Cole, HHFA Administrator, notes that architects, along with builders, mortgage lenders and materials producers, must seek in a constantly increasing degree to find the answer to the question of what people want when they set out to buy a house.

In addition to presenting the University of Michigan data, the volume rounds up results of another research project undertaken by the Small Homes Council of the University of Illinois. This latter study examined, abstracted and analyzed reports of 41 surveys and studies of housing likes and dislikes which had been made under various auspices and by various methods at different times between 1936 and 1950.

Also included are important results of a study conducted by the HHFA Division of Housing Research of the kinds and quantities of materials used in building new single-family detached houses throughout the country in the first six months of 1950. This Materials Use Survey was based on a sample of applications for Federal mortgage insurance.

Both of the university projects were HHFA-sponsored under the agency's now defunct research program. "What People Want When They Buy a House" was prepared in HHFA's Housing Economics Branch under the principal direction of E. Everett Ashley, 3rd, chief of the branch. It is part of a series of three special housing reports that make up the final publication under the HHFA research program. The other two, also published for the housing agency by the Office of Technical Services, Commerce Department, are: "The Cost of Municipal Services in Residential Areas" and "How to Make and Interpret Locational Studies of the Housing Market."

"What People Want When They Buy a House" can be purchased from OTS, Department of Commerce, Washington, D. C., or any of its 33 field offices, for $3 per copy.

(Continued on page 372)

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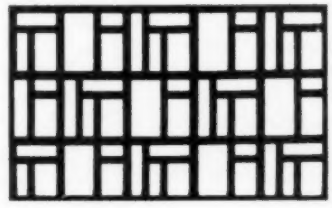

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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 370)

ADDENDA

Military public works authorization totaling $2,012,283,000, including $230.1 million for family housing for military personnel and their dependents, has been requested in a bill submitted to the Congress by the Department of Defense. The bill would authorize 3750 units of family housing totaling $79,814,000 "urgently needed for military personnel and their dependents," another $300,000 for family housing for certain personnel of the Joint Chiefs of Staff, and $150 million for family housing overseas to be acquired through the surplus agricultural commodities program. Authorizations requested by services: Army — $305,670,000; Navy — $418,728,000; Air Force — $1,137,585,000.

The Defense Department put into immediate operation a directive designed to eliminate duplication in the construction and alteration of medical facilities for the armed services. It specifically provides that joint planning of requirements for new construction and major alterations will be undertaken by the military departments. This is intended to preclude two of the services building separate facilities in the same area where one would be adequate for personnel of both.

The Veterans Administration has received White House and Bureau of the Budget approval for the replacement of eight hospitals in its long-range hospital improvement and modernization program. Anticipated expenditures for the whole program total $160 million.

The Department of State will have the biggest Federal office building in the District of Columbia, when the new "extension" to its present building is completed. The extension — which must set some kind of record as an office building "addition" — will add about 2,033,000 sq ft to the 630,594 sq ft area of the present building. Among all Federal office buildings, it will be second in size only to the Pentagon in nearby Virginia. Graham, Anderson, Probst and White of Chicago and Harley, Ellington and Day of Detroit are the architects; A. R. Clas of Washington, D. C., associated architect.

4

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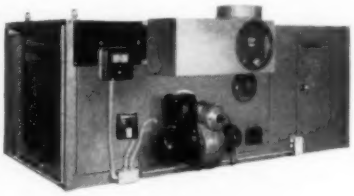

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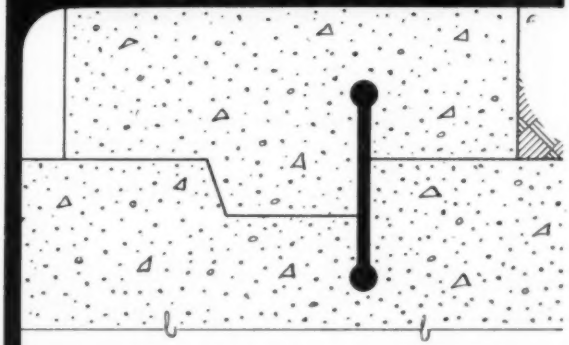

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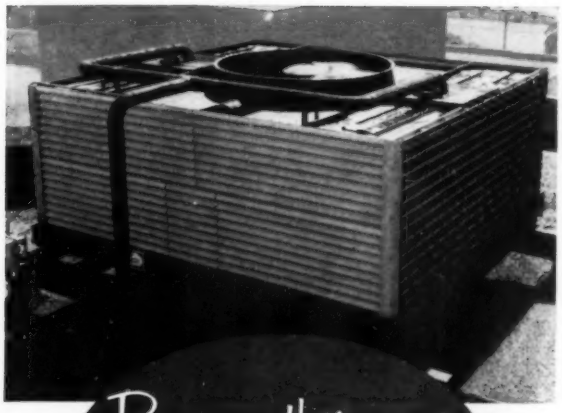

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We wish to express our thanks to the more than 5,000 architects, designers and students who registered for the porcelain enamel design competition. To the 573 registrants who submitted entries we wish to commend the excellence, originality and creative thought given to all of the designs. And to those who had the most difficult task of all, the judges, we wish to offer our gratitude for the many hours they devoted to the competition.

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THE RECORD REPORTS

(Continued from page 16B)

curred to anybody to admire on architectural grounds. And between these, in point of time, came the concession to the Pennsylvania Railroad of a transverse strip across the center of the reservation which absolutely destroyed and nullified the intention of the original designer. This intention it would not have been possible to recur to and execute, if the present President of the Pennsylvania had not, as the expert commission puts it, 'looked at the matter from the standpoint of an American citizen'. . . ."

It was the preservation and improvement of the "Grand Avenue" and the great cross, from the Capitol to Lincoln Memorial and from the White House to what is now the Jefferson Memorial, that occupied the main attention of the 1902 commission and, later, of the 1926 committee. L'Enfant's plan had shown only a T-shaped park in this place, which was to contain the White House, the Capitol and the Washington monument. But with the reclamation of the marshes along the Potomac, the T was converted into a cross, at the head of which was planned, as Schuyler phrased it, "the memorial to the only American whose monument would not be an anti-climax after that of Washington."

Apart from considerations of monumentality, the commission also considered the problems of Government working space, although if its plans had been followed they would have represented a drastic underestimation of the space requirements of the Government half a century later. The White House already had the Treasury department on its one side and the old State Department Building on its other. "The thing now to be done," Schuyler reported, "is to extend northward, by the acquisition of Lafayette Square, and gradually to complete, the quadrangle of which they form parts of two sides and of which one end is the White House and its grounds. . . . The need of expansion of the Executive departments seems thus to be supplied for some generations to come"; (c.f., 3, with Government buildings shaded).

The need for Congressional office space, the commission agreed, was also pressing. The state of things in the Congressional Chambers was described by Schuyler: "The House, in particular, is physically incapacitated [as an arena of debate] by the number of its members,

(Continued on page 380)

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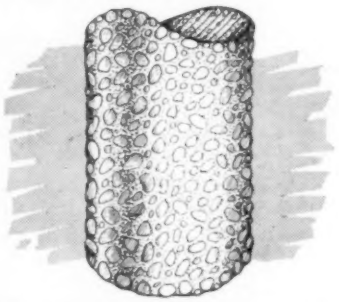

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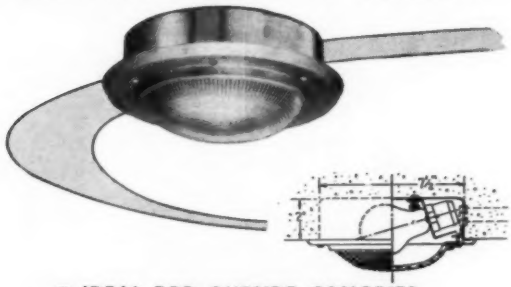

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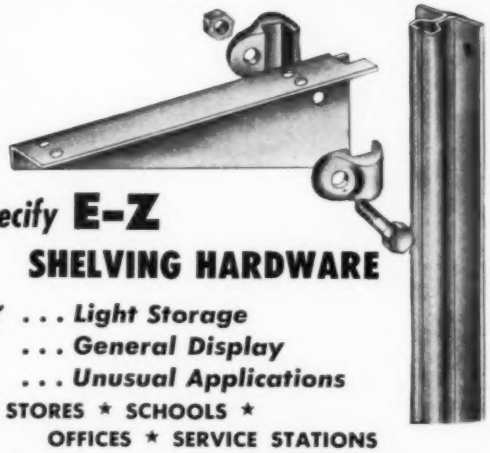

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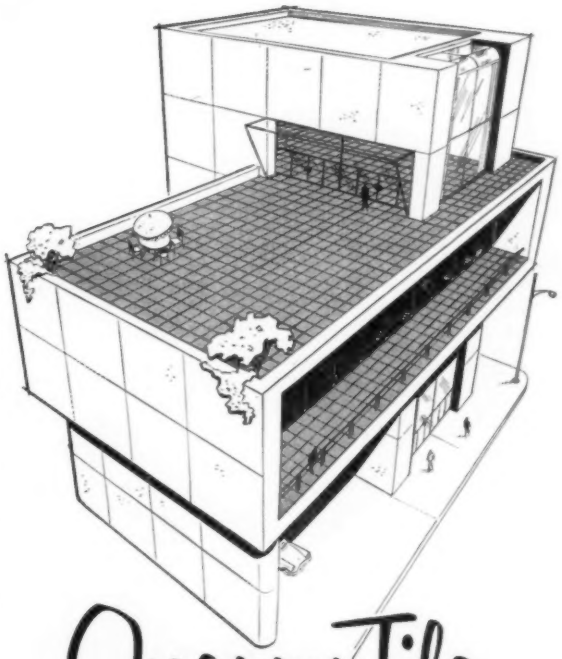

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THE RECORD REPORTS

(Continued from page 376)

and by the fact that the desk of each of them can be and is used for the transaction of the private or public business of its occupant, without reference to the proceedings on the floor. . . . A debate in the house is accordingly shocking to the stranger in the galleries, from which the House bears much more the aspect of a beer garden or of a Stock Exchange than of a deliberative assembly."

In 1926, the year of the founding of the National Capital Park and Planning Commission, Glenn Brown, who had been secretary-treasurer of the A.I.A. from 1899 to 1913, wrote a three-part report for the RECORD on "The Artistic Growth of the Washington Plan." He had nothing but praise for the conception and effects of the "visionary" McMillan plan.

The Lincoln Memorial had by this time been completed and the Mall planted, according to the 1902 plan. The "moral force," as Brown called it, of the plan had forced into their ordained sites both the Lincoln Memorial and the Agriculture Building, despite controversy in both cases.

Several projects, since completed, were in various stages of planning in 1926. Pressure was being applied for the removal of the Botanical Gardens from Congressional grounds, and the site suggested for a National Arboretum was the one finally used — Mount Hamilton, north of Anacostia Park. Anacostia Park itself, the result of the Navy's dredging of what L'Enfant called "Eastern Branch," was not yet completed. And McKim, Mead & White had designed but not yet built the Memorial Bridge to Arlington.

In a section titled "Errors to be Righted," Brown urged most strongly the razing of the World War I temporary buildings.

"The final and proper development of the Capital City," Brown concluded, "is an object in which every citizen of the country may take an interest and feel a pride. It is the Capital of the United States. The architects and artists should strive for its completion as an example of a great landscape composition. The layman should demand its completion as he wants his Capital City as dignified and beautiful as any in the world. When this great composition is finished all will acknowledge it unsurpassed."

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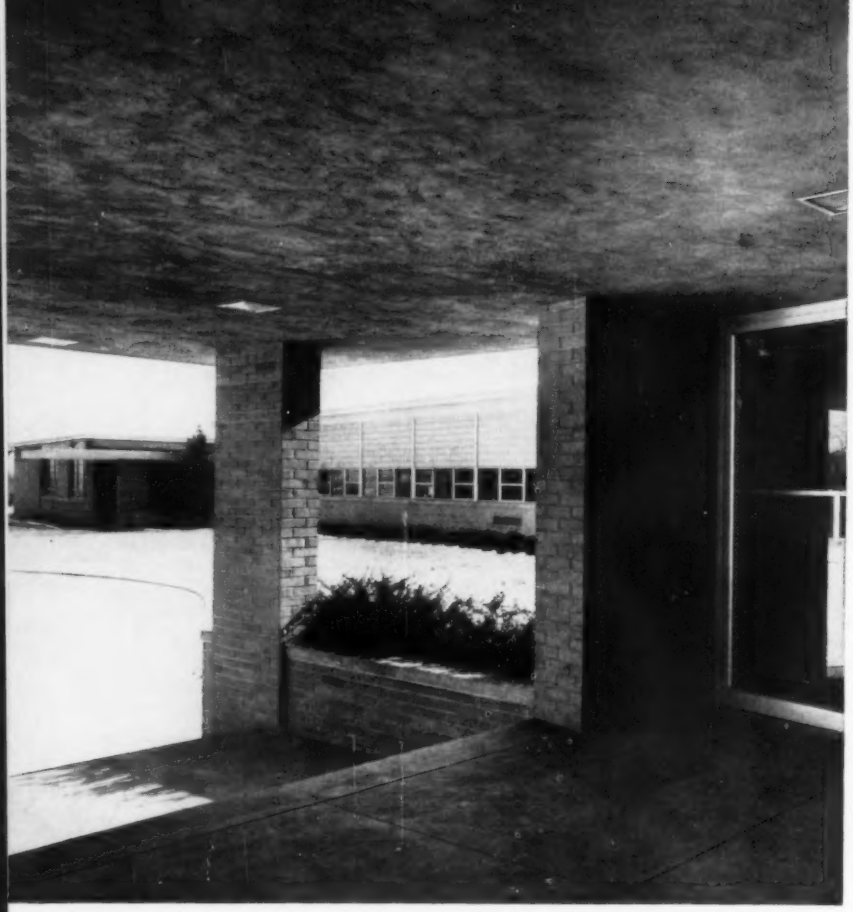

In Pennsylvania—Monroeville Junior High School. Architect—Walter E. Schardt, Pittsburgh; Consulting Engineer—Leland W. Cook, Pittsburgh; Contractor—Guy Miller Company, Pittock, Pa.

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In California—Westlake Shopping Center's J. C. Penney Company Department Store in Daly City. Architect & Engineers—Lloyd Gartner, A.I.A. and Associates of San Francisco; Contractor and Owner—Henry Doelger Builder, Inc., of Daly City.

J. C. Penney Company Store in Daly City, Calif., (lower left) is a totally fireproof department store with 93,350 square feet in its basement, first floor and second floor. The architect said:

"The facility and speed with which Steeltex Floor Lath was installed and the whole operation was completed resulted in a saving of many weeks of valuable construction time."

Henry Doelger Builder, Inc., builder and owner of the Westlake Shopping Center which includes the J. C. Penney store, credits Steeltex with "about six weeks saving in time and about five per cent in cost."

Monroeville Junior High School, near Pittsburgh (upper left) used approximately 110,000 square feet on floor slabs with the contractor, Guy Miller Company, declaring:

"At a conservative estimate, 1½ cents per square foot was saved in time and material as a result of using Steeltex instead of other methods."

The American National Bank Of Austin, Tex., (upper right) used about 7,000 square feet of Steeltex. Contractor J. M. Odom said: "On steel joist spans under 25 feet with a spacing of not over 32 inches we save approximately five cents per square foot over most other types of deck."

Fairchild Aircraft Division, Office Building, Fairchild Engine and Airplane Corp., at Hagerstown, Md., (lower right) Steeltex was used for 46,000 square feet of office space. The architect estimated "a Steeltex-supported slab over bar joists, spaced 24 inches on center, to be 40 to 45 per cent less expensive than a conventional four-inch reinforced slab using wooden forms, and over steel beams, six to eight feet on center."

Peter A. Strobel of the consulting engineering firm of Strobel and Salzman said the savings due to the use of Steeltex on the Fairchild building "are quite substantial and, according to our estimate, vary between $.40 to $.70 per square foot."

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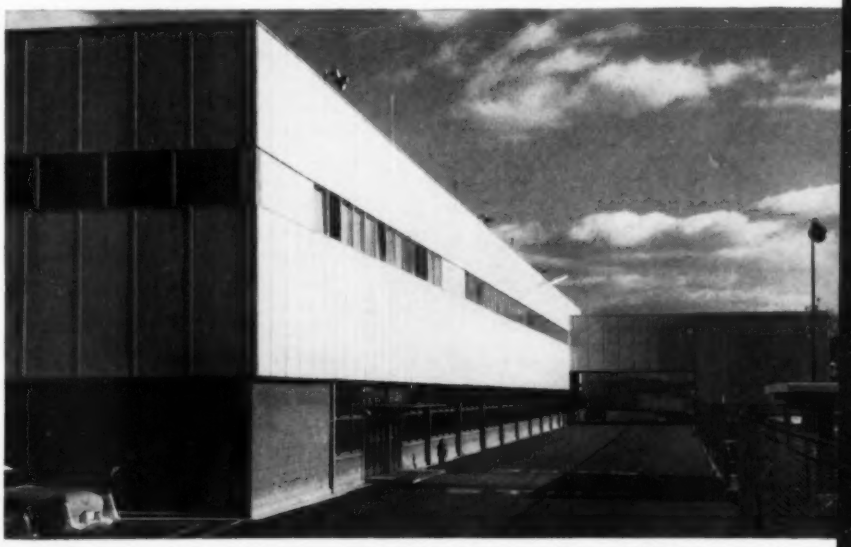
In Texas—American National Bank of Austin, Tex. Architect—Kuehne, Brooks and Barr, of Austin; Contractor—J. M. Odom of Austin.



In Maryland—Office Building for Aircraft Division of Fairchild Engine and Airplane Corp. in Hagerstown, Md. Architect—Fordyce & Hamby, New York City; Consulting Engineer—Strobel & Salzman, New York City; Contractor—Calabro Construction Co., Inc., Linden, N. J.

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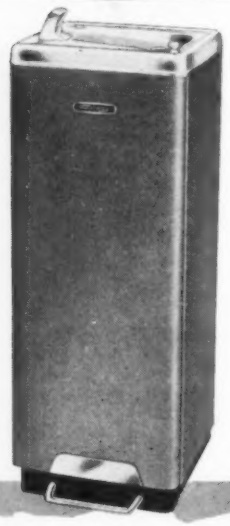

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REQUIRED READING

(Continued from page 66)

Vatican Library across the middle of it. A new wing of the library further divided the area in the nineteenth century. (Fig. 4) The author makes it clear that Sixtus' aesthetic vandalism was prompted by motives of religious conviction and policy. In the Counter Reformation atmosphere of the late sixteenth century the Belvedere Court had come to be regarded as sinfully Pagan and luxurious.

Ackerman's Chapter XII, "Style and Sources," will probably be of greatest interest to architects and scholars as a whole. In it he presents the thesis that the Belvedere and, by implication, Bramante's St. Peter's as well, represented a break with the fifteenth-century development of Renaissance architecture and the beginning of a markedly different attitude toward design. He sees Bramante as an initiator, an architect whose work in Rome by no means grew out of fifteenth-century Florentine architecture, but who began something new and essentially Roman. Ackerman thus largely rejects the concept of continuity between fifteenth- and sixteenth-century developments and tends to emphasize concepts of rupture and new beginning. He bases this thesis upon two ideas: 1) the revolutionary character of Bramante's conception of space as a positive element, 2) Bramante's use of forms derived from ancient architecture as organically integrated components of the new space conception. In my opinion, while Ackerman has made an important contribution here he still slightly overstresses the newness of such qualities in Bramante's work; I feel them, for example, to have been already present in various of Brunelleschi's and Alberti's buildings as well. Similarly, the author's belief that Bramante's court was the first example of developed Renaissance exterior space organization — with stage design as its only true fifteenth-century prototype — seems to me somewhat overstated in view of the similar implications at least of Brunelleschi's Ospedale degli Innocenti on the Piazza Annunziata in Florence and Rossellino's Piazza in Pienza.

These objections are minor, however, and even if they were justified

(Continued on page 388)

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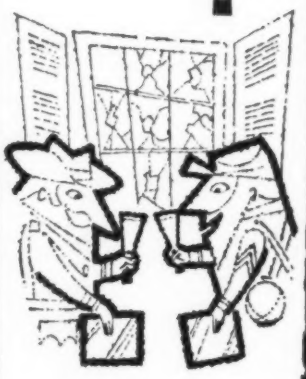

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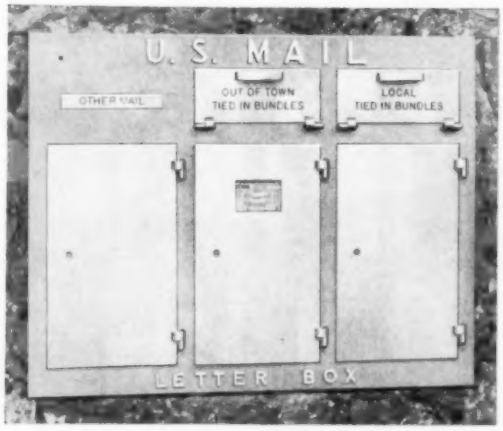

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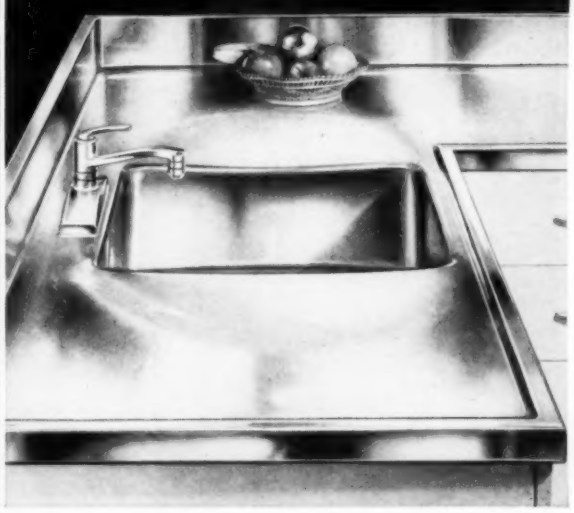

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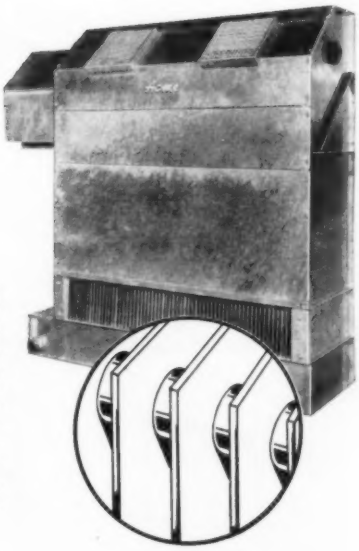

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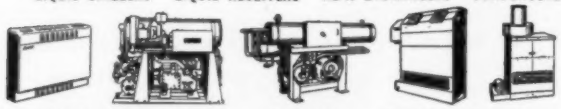

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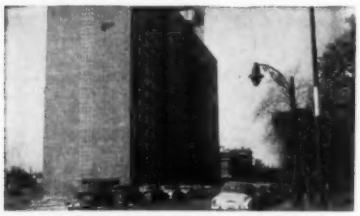

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REQUIRED READING

(Continued from page 384)

they would by no means invalidate the revealing discussion of design principles and Antique sources which forms an important part of Ackerman's chapter XII. The concept of exterior space as a positive element was certainly Antique. Such an attitude involves an acceptance of the exterior world of nature which was hardly medieval. Ackerman shows how Bramante, prompted and directed by the idea of the aggressive Julius II, made use in his design of antique Roman space organizations of types which he could have known from temples, as at Praeneste: from palaces, as in the Hippodromes of Domitian's palace on the Palatine: from villas as in Nero's Domus Aurea and in the Poikile and Canopus of Hadrian's Villa near Tivoli. He shows how the use of such elements was in keeping with Julius' policy of building up a Rome which, under the Papacy, was to serve as a new world capital — one which was to insist, through its forms, upon its historical continuity with the old. Ackerman convincingly demonstrates how all this was clearly understood by Bramante's contemporaries. He reproduces a fresco by Perino del Vaga, in the Vatican Palace, which imitates Roman wall painting techniques and shows the Belvedere as a Roman villa perspective. (Fig. 5) In the foreground of this fresco the resemblance of the Belvedere to ancient hippodromes and arenas is stressed, and a naval battle is taking place upon the flooded lower court. All this is purely imaginary so far as the Court itself is concerned, but it pointedly recalls the Roman Naumachia that occupied almost the same site in ancient times. Perino's painting also emphasizes Bramante's perspective organization of the Belvedere: a set of spatial diminutions and changes of level intended to be seen from the Papal apartments on the second floor of the Palace, from which the painting itself would seem to have been done. (Fig. 4) These apartments were decorated by Raphael in the years after 1508. Raphael of course worked closely with Bramante and was, in architecture, his pupil. Ackerman suggests that the observer in the Papal apartments was probably in-

(Continued on page 392)

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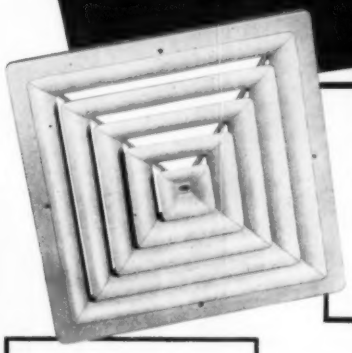

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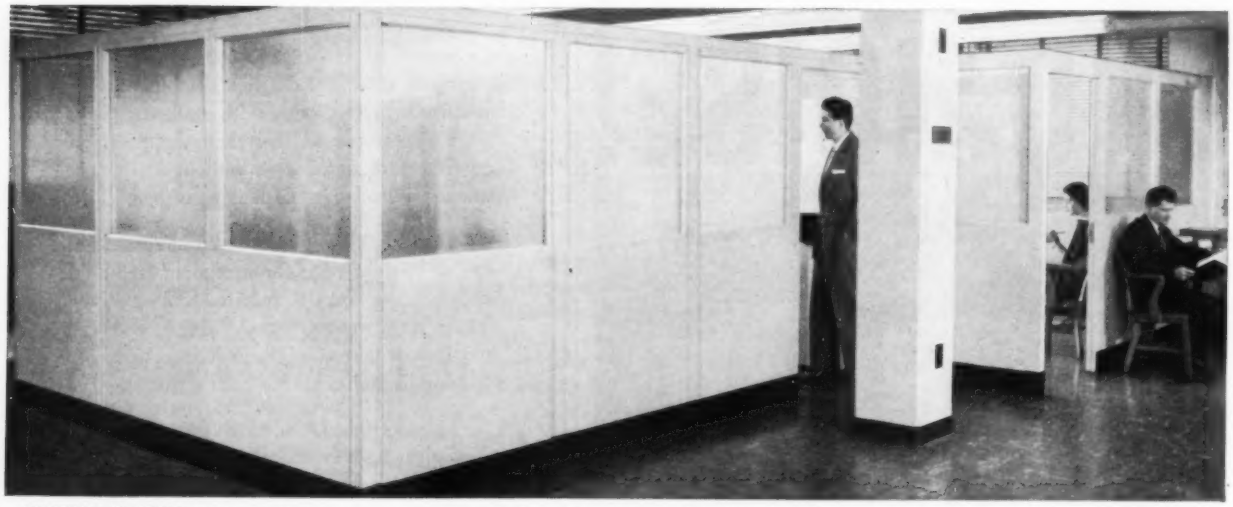

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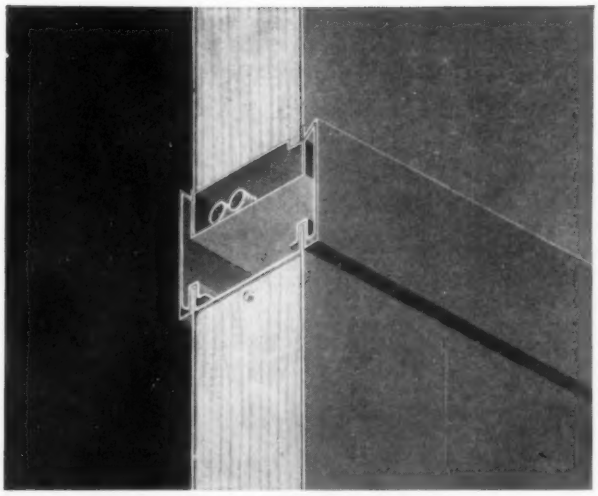

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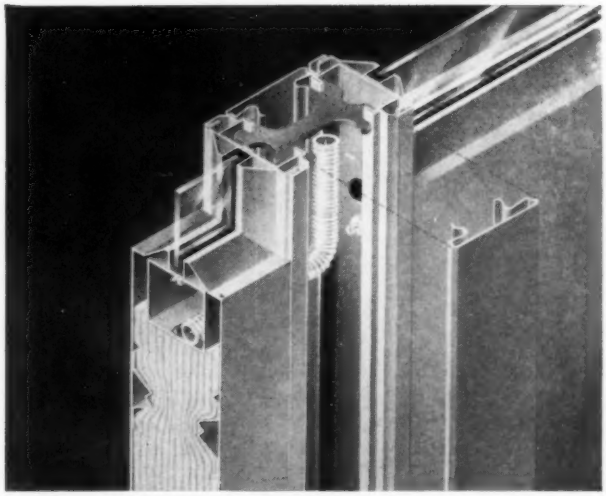

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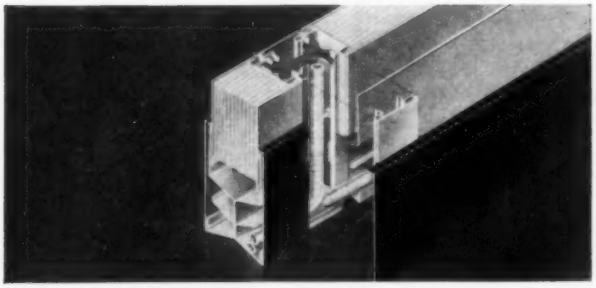
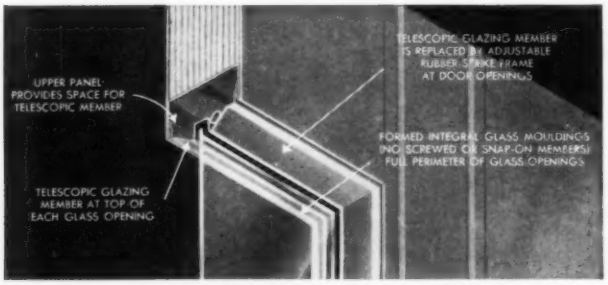


EASY ACCESSIBILITY OF WIRING is an added benefit when you use RF partitions. Wiring can be laid continuously through the bases and posts. Additional wiring facilities are available in the cornice, chair rail, transom rail . . . even through the panel itself. Wiring is accessible without tools. No exposed wiring—no dirt or delay.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(Continued from page 388)

tended to experience Raphael's frescoes and Bramante's court at the same time. He does not pursue the subject further, but it is worth pursuit. The window of the apartments which is directly on axis with the court is that of the Stanza del Incendio, but from that point one's view of the court is partly blocked by the angle of the Torre di Borgia. The next room, almost on axis and with an unblocked view of the court, is the Stanza della Segnatura. If from that point the observer was intended to experience both the frescoes and court it is worthwhile to examine the nature of the frescoes in this room. On one side is the *School* of *Athens*, a garland of figures disposed in an architectural setting which recedes in the strong vault rhythms of an unfinished building and seems related to one of Bramante's projects for St. Peter's. On the opposite wall is the *Exposition of the Sacrament*, the so-called *Disputa*. (Fig. 6) Here a great hemicycle or apsidal composition revolves around a central disk which enframes or supports the Trinity with the Virgin and St. John. This set of forms should be compared with that of Bramante's Exedra at the end of the perspective in the Belvedere court. (Fig. 3) The hemicycle and pivotal disk are common to both. Therefore, if the space of the *School of Athens* seems to refer to St. Peter's, that of the *Exposition* seems to refer to the Belvedere right outside the window. Moreover, if pagan philosophy was being brought into concordance with the new Rome by being set within Bramante's project for the new Papal church, it may follow that Raphael in the *Exposition* was justifying Bramante's echo of a pagan theatre in the Exedra by using its forms to reverberate around the Trinity itself. Certainly Raphael's two frescoes in the Stanza create a strong spatial axis which crosses that of the court in a T. Court and Stanza would thus seem to compliment each other both in form and meaning, and each reaches similar climaxes of hemicycle and perfect orb. Standing in the cross axis of the Stanza, with the *School of Athens* to his right and *Exposition* to his left, the observer would have looked through a win-

(Continued on page 396)

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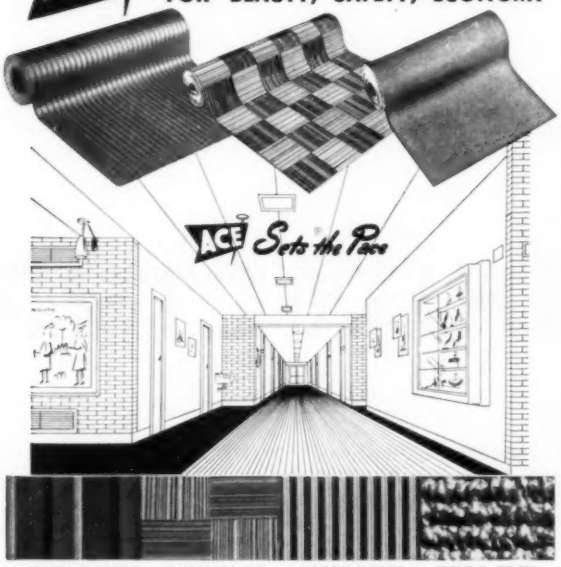

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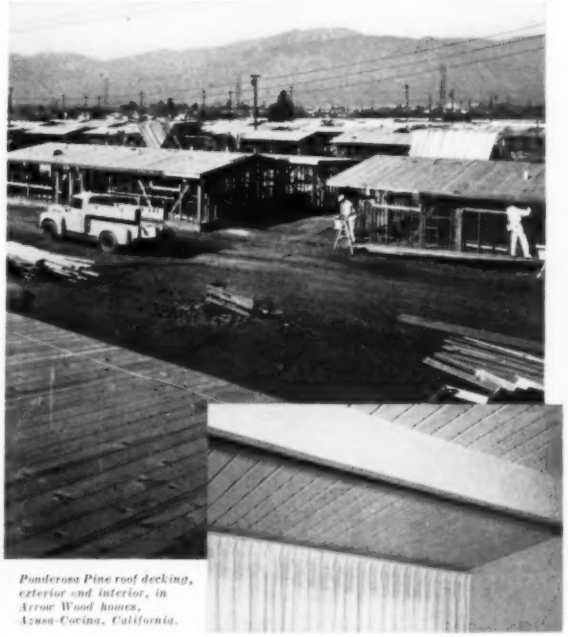

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George Bain Cummings, president, The American Institute of Architects, says, "This bonus issue might well have been entitled 'Architecture for the Good Life,' the theme of the 1956 convention of The American Institute of Architects. It so well illustrates our facet of that theme.

"We are delighted that *Architectural Record* is publishing this practical demonstration of the architect's professional usefulness in the home field. Here in this handsome and helpful edition the public may observe real evidence of easier, healthier, safer and more enjoyable living through architecture."

RECORD HOUSES OF 1956 will feature **4** major editorial sections:

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Criteria for the selection of featured houses include: (1) economical design in the $20–$50,000 price range, (2) three or four bedrooms, (3) facilities for growing children, (4) widespread geographical distribution, (5) functional excellence, (6) beauty of form, texture and color, (7) average sites, (8) design by 20 different architects — with full recognition of great new design talent along with the best known including . . .

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REQUIRED READING

(Continued from page 392)

dow around which was painted Apollo and the Muses on Mount Parnassus. Behind these would have stretched, appropriately enough, the theatre and humanist pleasure garden which the court was intended to be. There are other iconographical reasons for these forms, of course, but in any event it would seem that here Raphael and Bramante were producing a concordance not only of architecture and painting but also of Pagan Antiquity and Christian Renaissance.

Ackerman concludes his critical chapter by pointing out the important influence exerted by the Court of Belvedere upon later architecture. Its character of movement and climax prefigures the Baroque. Its organization of exterior space according to axial and perspective principles serves as the basis for much later city planning. Its ramps, fountains, stairs, and niches along a perspective allée become common furniture of later garden design. The space of the world outside, essentially lost to the imagination of men after the fall of Antiquity, is brought back in this way to the consciousness of the western world. This mighty fact, involving as it does a whole new opening of men's minds to nature, to life, and to an understanding of the pre-Christian gods, may be the most important expansion of the Western view of reality which the Court reflects.

This review cannot be terminated without a word said in praise of the kind of scholarship which Ackerman's book represents. The pressures toward expedient and short range action in place of contemplation and long range growth are very strong in America. They are difficult to withstand both in scholarship and in architectural design itself. Probably such pressures must be strong in any active and expanding mass society. But they must be withstood by at least a few scholars and artists if the action of the rest is to have goals with any meaning to aim toward and information of any worth to act upon. Ackerman is one of those comparatively few young American scholars who, like a few American architects, have been able to withstand the pressures toward expedient action and to build a monument.

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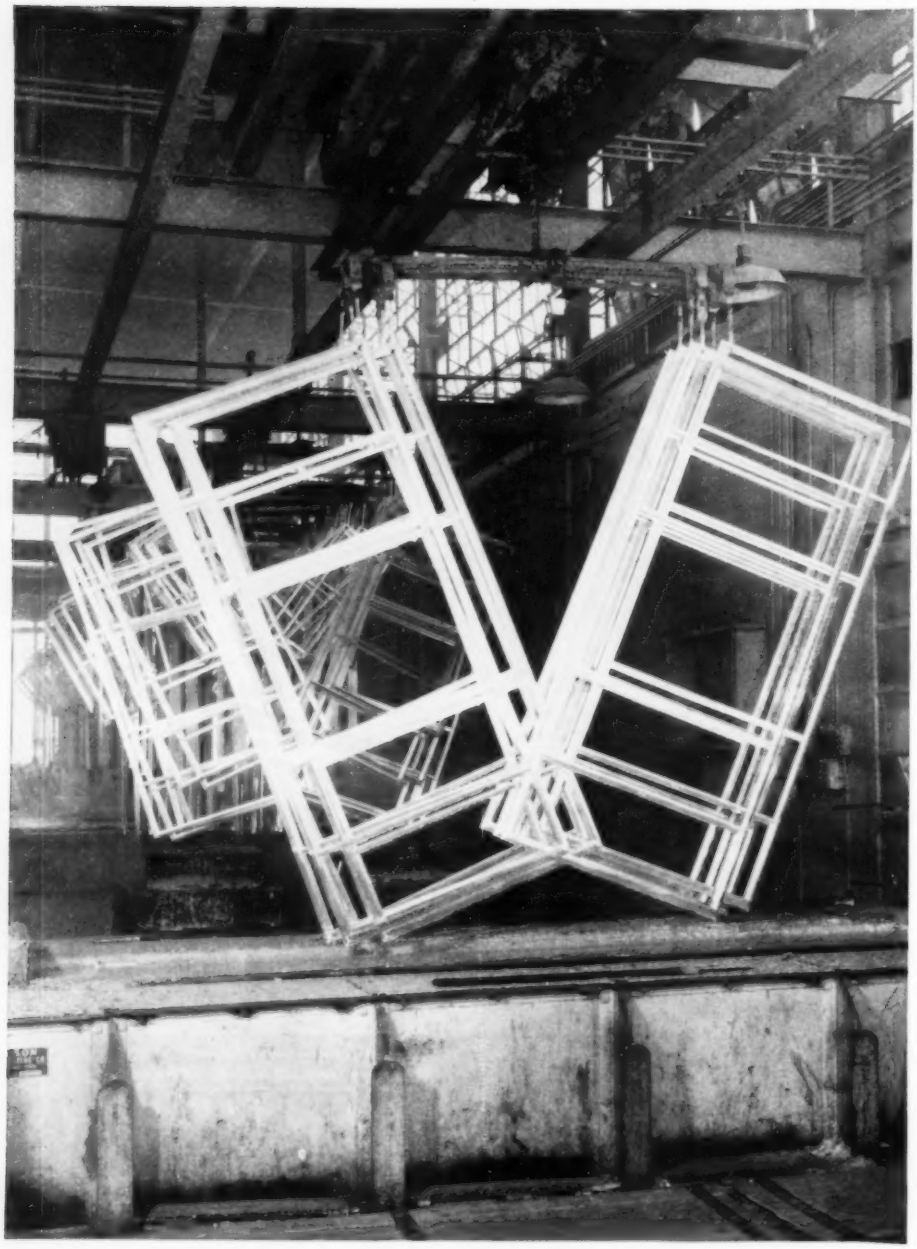

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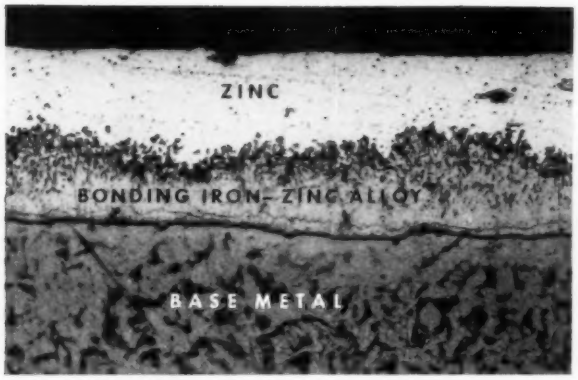
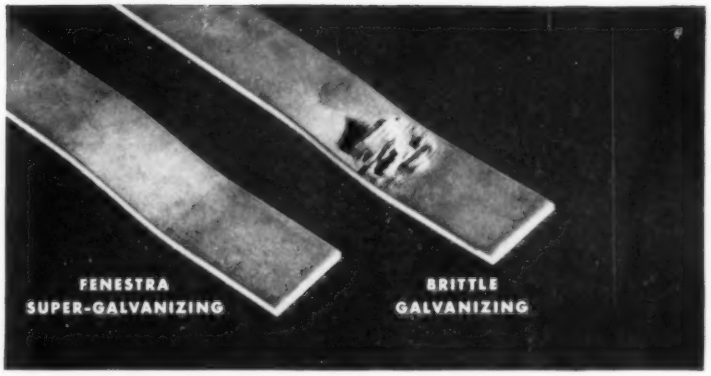


This microphotograph shows how the zinc coating alloys with the steel base. Fenestra's Galvanized-Bonderized Finish is *self-healing*—small breaks in the surface are automatically closed by sacrificial action of the zinc, leaving the steel protected underneath!



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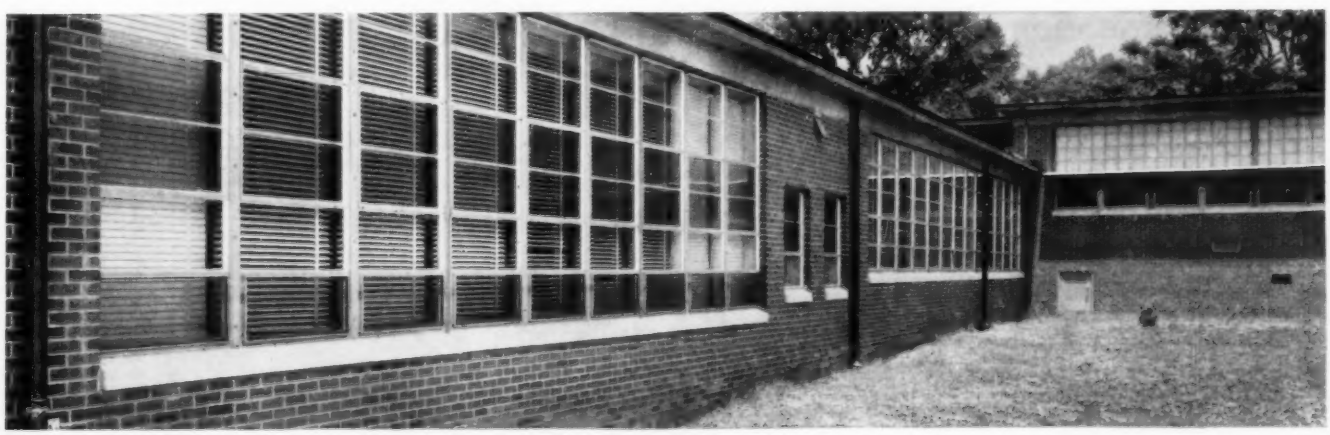
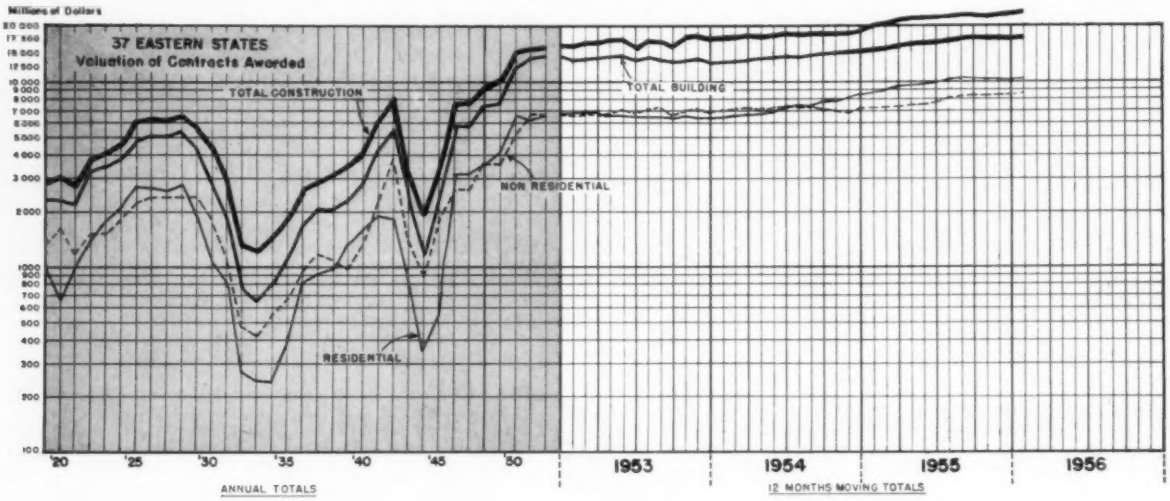




Charts by Dodge Statistical Research Service

FIRST 1956 FIGURES: MORE NEW HIGHS

It was the same old story as F. W. Dodge Corporation released its first monthly totals of 1956 on construction contracts awarded in the 37 states east of the Rockies. The month of January set new record highs in all three of the major Dodge categories — residential, nonresidential and heavy engineering — and the total for all construction, at $1,858,228,000, set a new overall record for the month, 25 per cent above the previous record in January 1955. The record January total for residential construction of $694,392,000, three per cent over the January 1955 record, was a reversal of a declining trend in the category which appeared late in 1955. For nonresidential construction, the total was $661,275,000, 17 per cent ahead of the 1955 month, with manufacturing buildings, schools and institutional buildings accounting for the rise. Heavy engineering contracts — swollen, it should be noted, by several unusually large projects in Pennsylvania and Ohio — reached a total of $502,561,000, a whopping 102 per cent up from January 1955.

Source: F. W. Dodge Corporation

STORES*

Contracts Awarded—37 Eastern States

Valuation (in thousands of dollars)

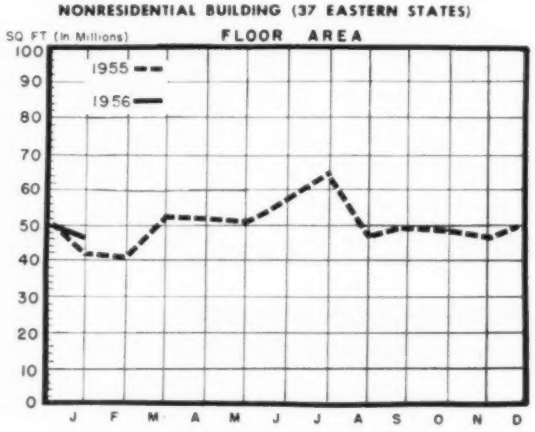
Year	Annual Total	Monthly Average	Year	Annual Total	Monthly Average
1929	211,132	17,594	1949	385,902	32,158
1935	72,760	6,063	1950	543,782	45,315
1941	119,854	9,988	1951	364,567	30,380
1944	17,372	1,448	1952	355,155	29,596
1946	354,640	29,553	1953	604,667	50,389

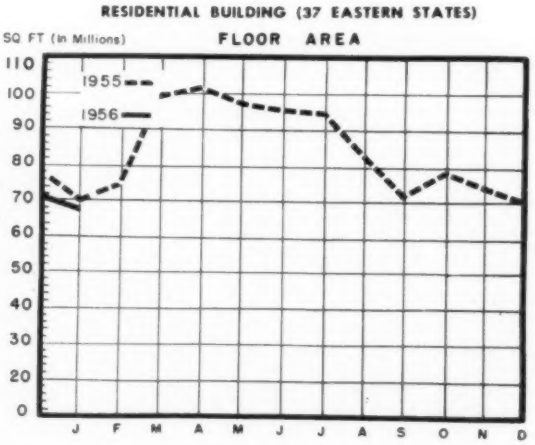
Monthly Totals

	1955			1956
Jan.	67,820	July	120,936	Jan. 72,267
Feb.	58,927	Aug.	116,765	
Mar.	84,980	Sept.	78,328	
Apr.	78,949	Oct.	82,923	
May	92,556	Nov.	103,944	
June	125,400	Dec.	110,942	

12-months total—1,122,470

* Stores are the subject of Building Types Study No. 232, pages 205-228





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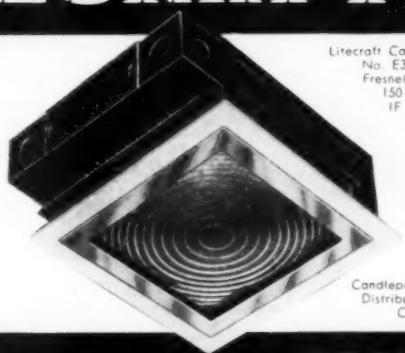
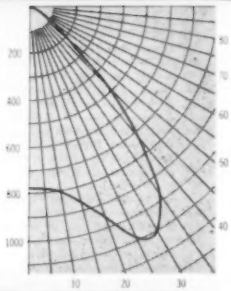


Litecraft Catalog No. E302-12 Fresnel Lens 150 Watt IF Lamp



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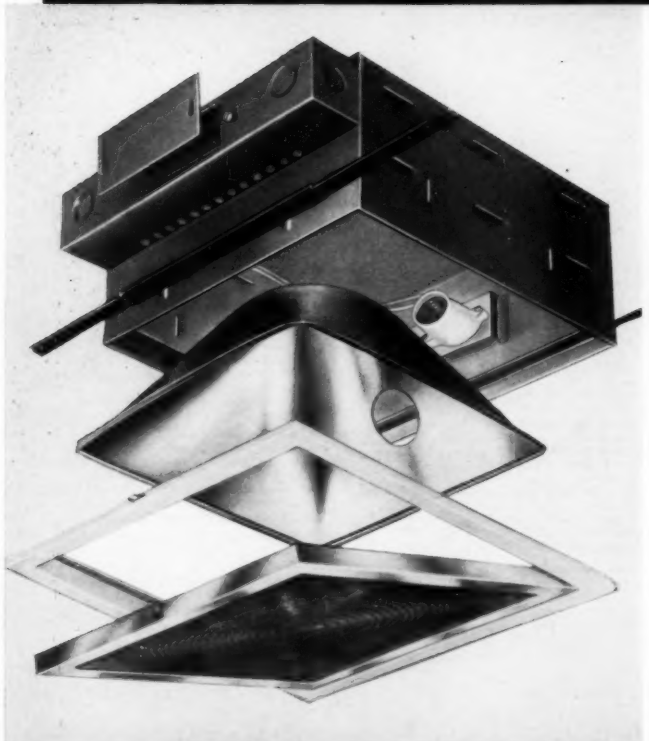

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Inner and outer access plates and six knockouts assure easy entry into wiring compartment through sides, top or end. UL Approved for use with lowest cost wire (R, T, TW, etc.) No asbestos wire needed.

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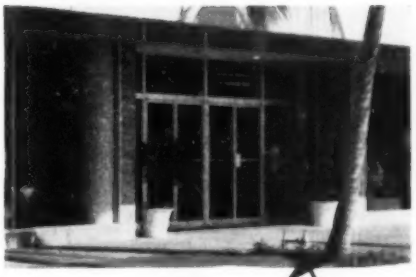

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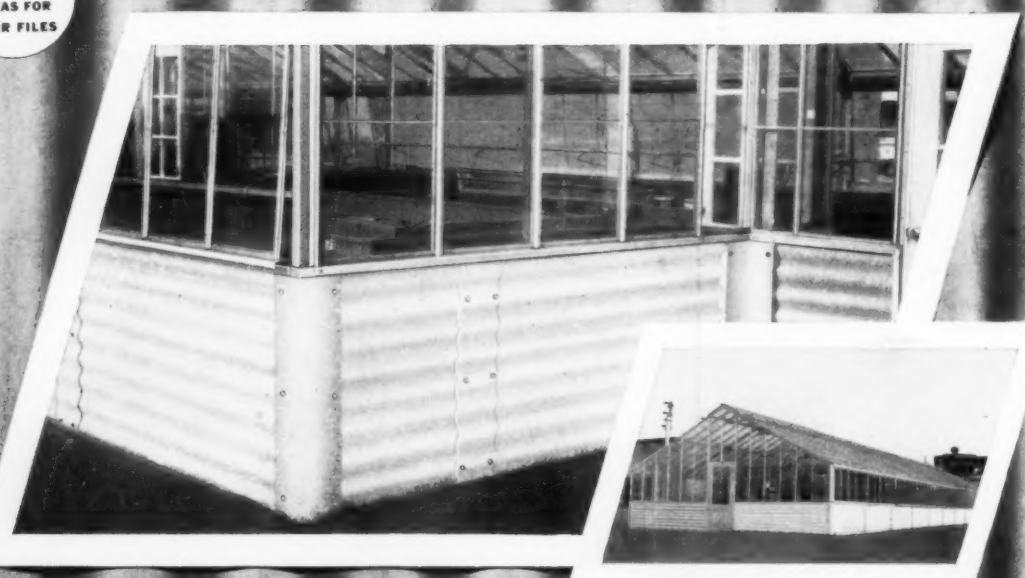

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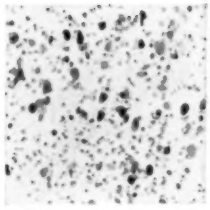
styled for MATICO by **Margaret Lowe**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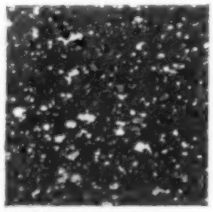
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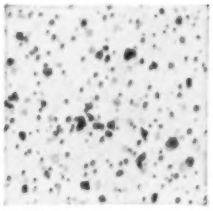
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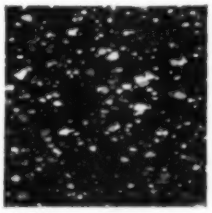
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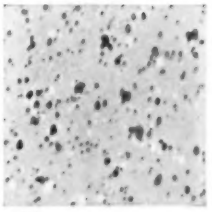
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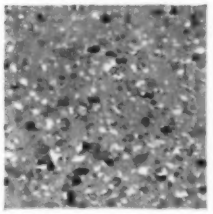
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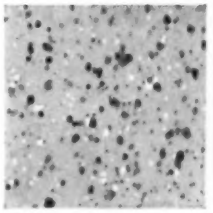
*Margaret Lowe Colors *and* regular Aristoflex-Confetti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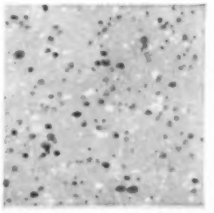
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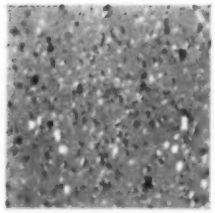
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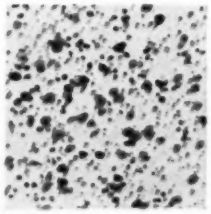
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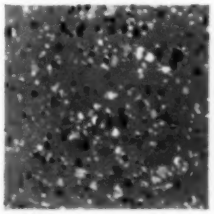
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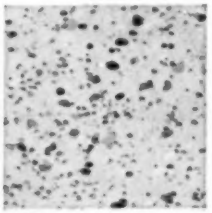
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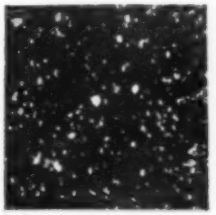
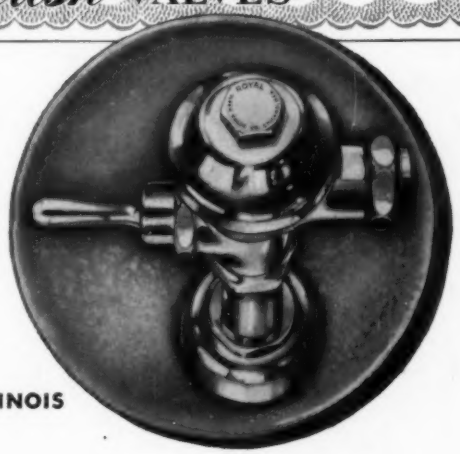

Q-765

1906 SLOAN 1956

Flush Valve Leadership for 50 Years

¶ The achievement of Sloan leadership has been the reward for a revolutionary flush valve design of ingenious simplicity, *plus* never faltering application of advanced engineering skill, constant vigilance over fine workmanship, and unceasing research for improvement. ¶ Fifty years ago, when the first Sloan Flush Valve was produced, a few others were already on the market but none had won general acceptance. Sloan's early progress was slow and steady until a basic fact became widely known and its significance clearly understood: **The SLOAN ROYAL FLUSH VALVE never needs adjustment—there's nothing to adjust.** ¶ Soon the enthusiastic praise of users spread throughout the nation and then to other countries. Today there are installations in every civilized country, in every kind of building, and on ships that travel the water highways of the world. ¶ Since the beginning of its climb to leadership Sloan has developed a complete line of dependable flush valves to meet every practical purpose and price requirement. Upon this firm foundation we proudly celebrate our 50th Anniversary.

SLOAN *Flush* VALVES



Another Sloan achievement in greater user satisfaction is the Act-O-Matic Shower Head, which provides a refreshing cone-within-cone spray and is automatically self-cleaning each time it is used. It does not clog—does not drip—does not waste water and fuel. Its exclusive advantages are duplicating the enthusiastic praise that brought fame to Sloan Flush Valves.

SLOAN VALVE COMPANY • CHICAGO • ILLINOIS